TECHNOLOGY DEPT.

Gas Journal

Vol. 268. 103rd Year. LONDON, OCTOBER 3, 1951. No. 4609. Price 1/3

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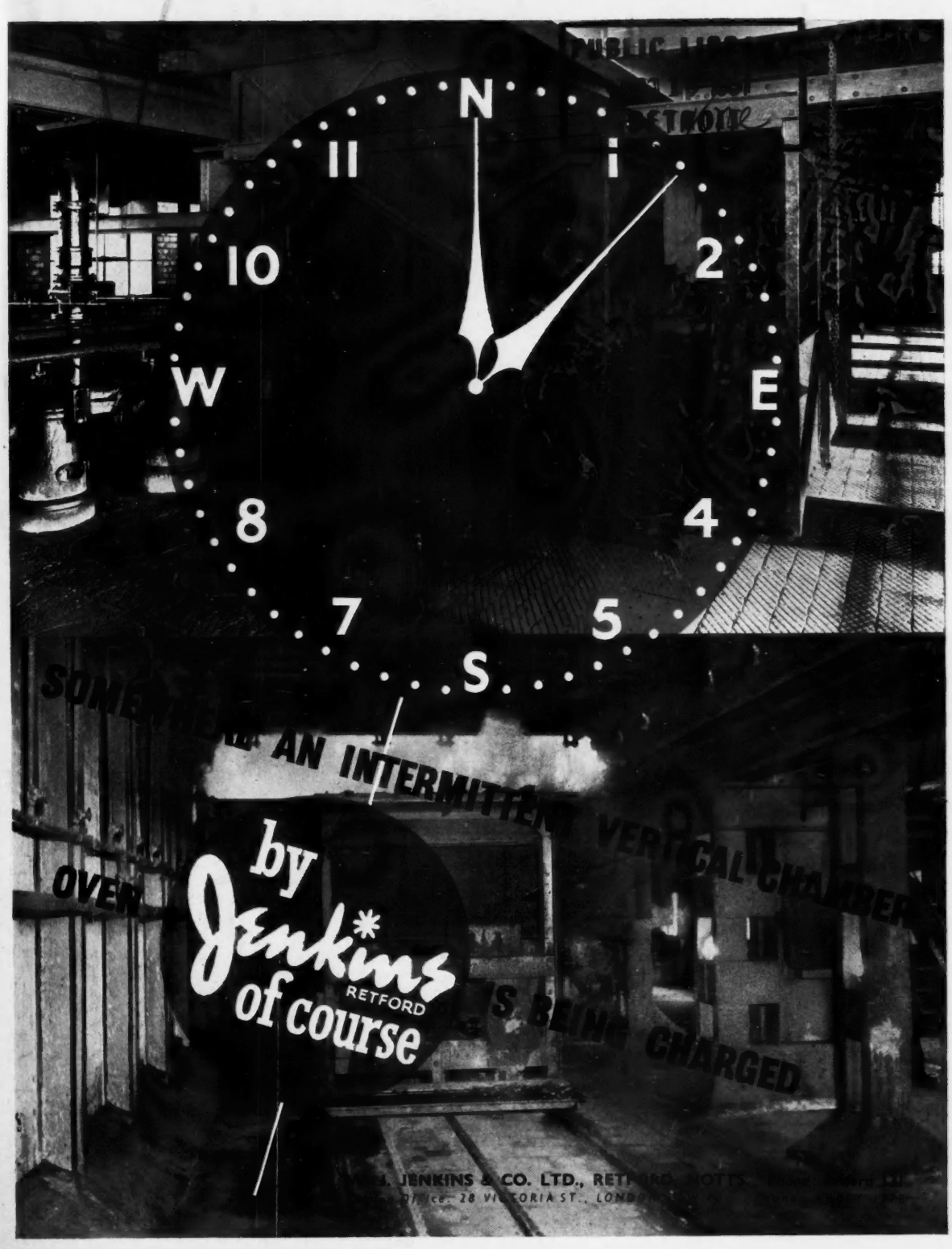

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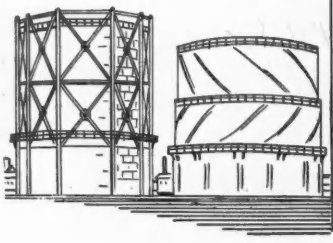

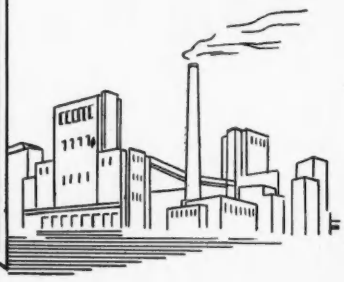

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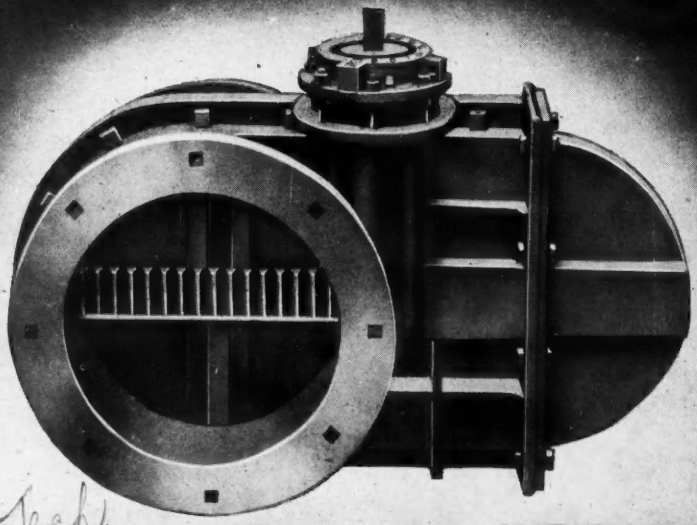

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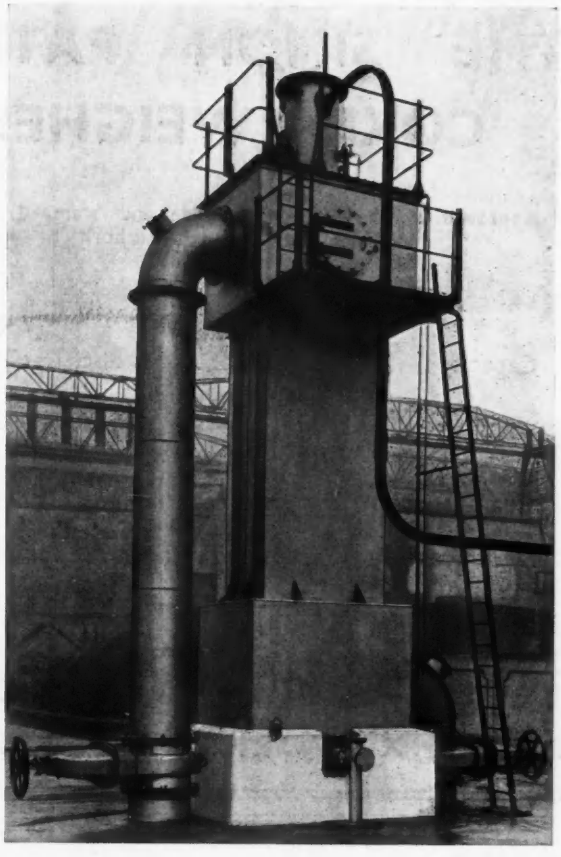

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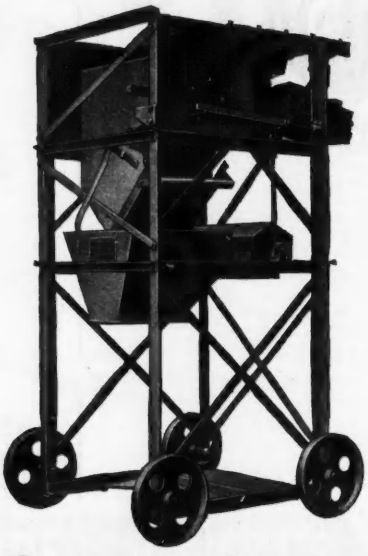

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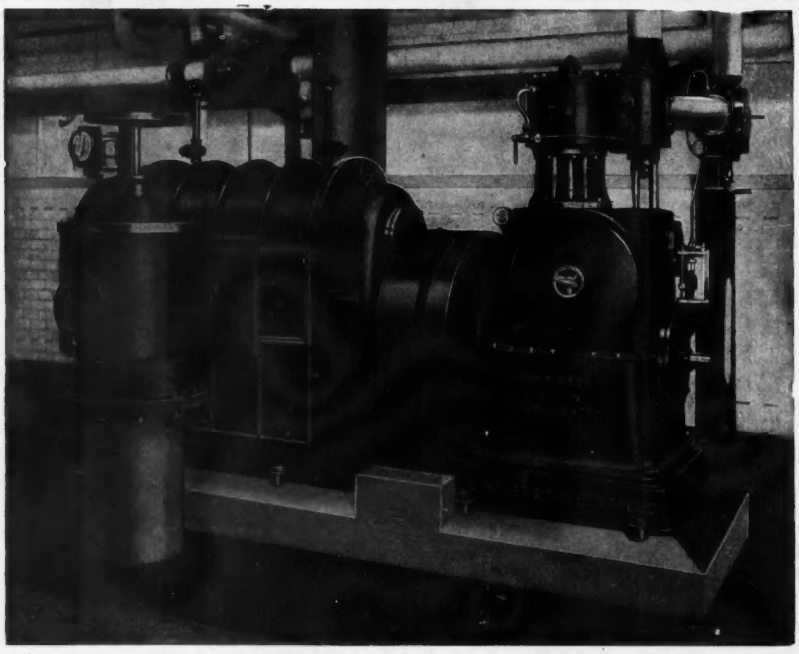

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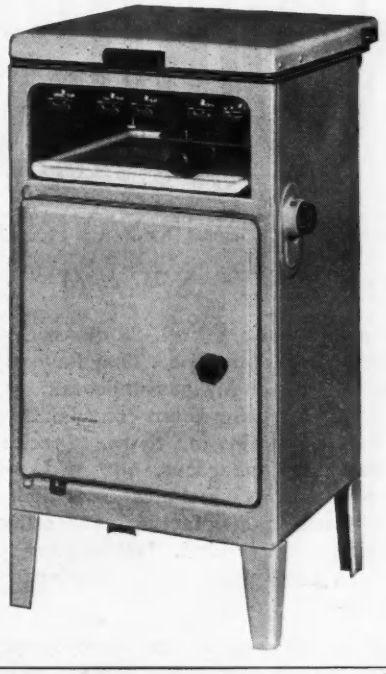

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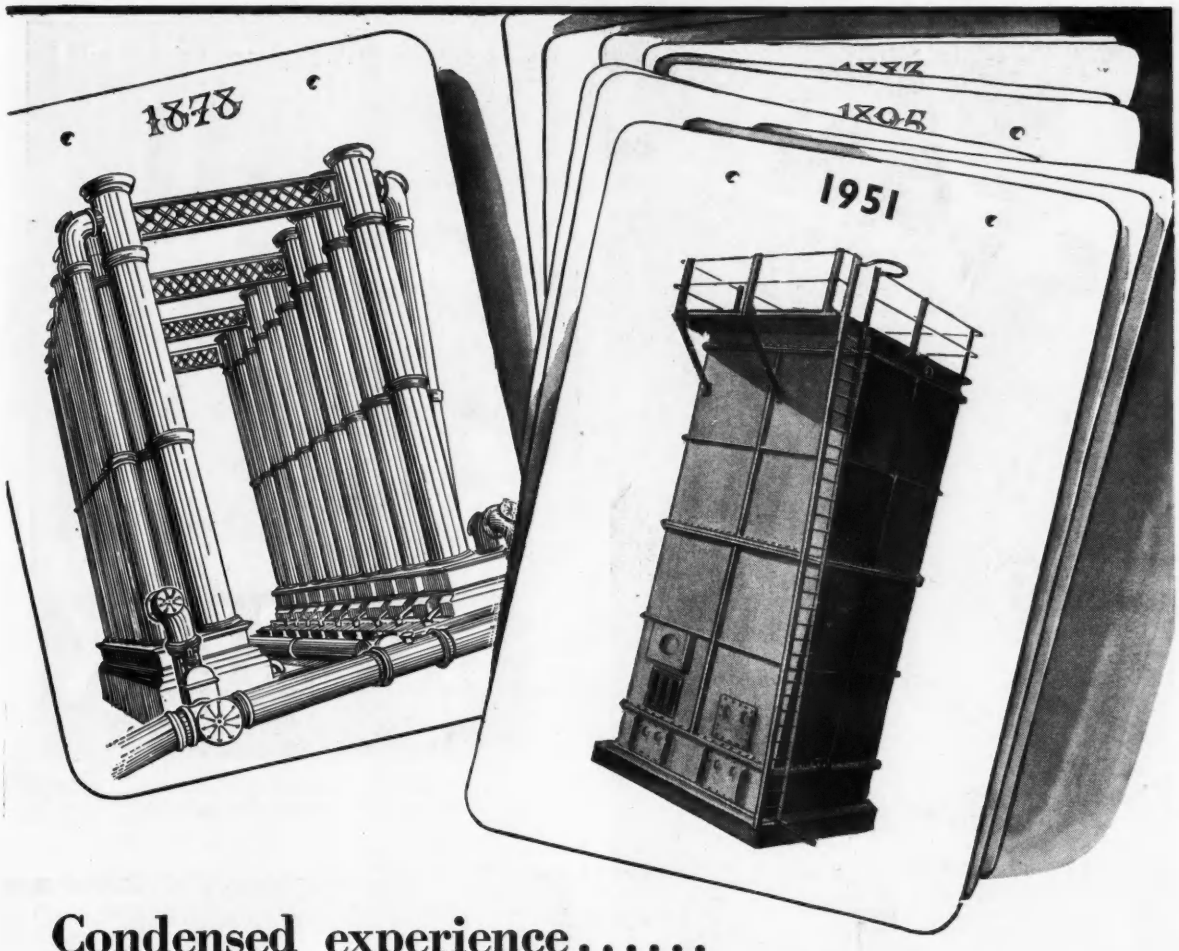

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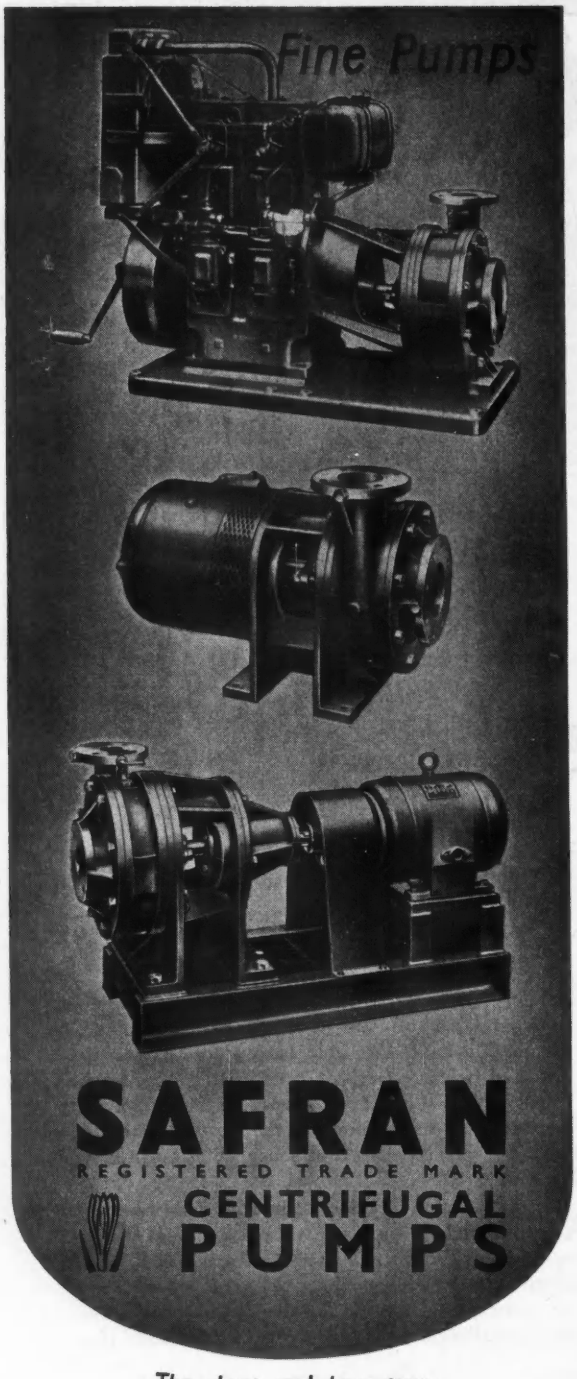

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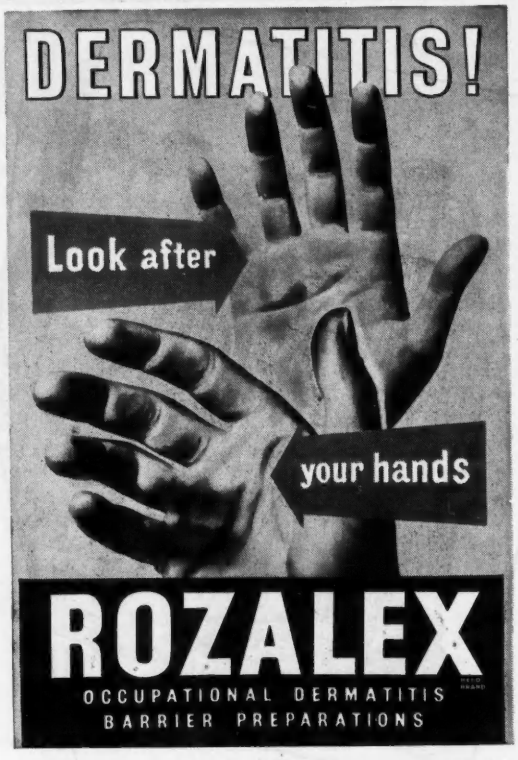

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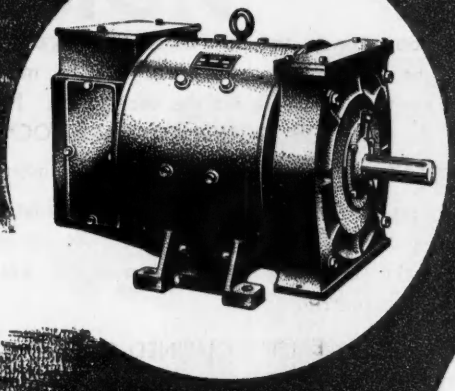

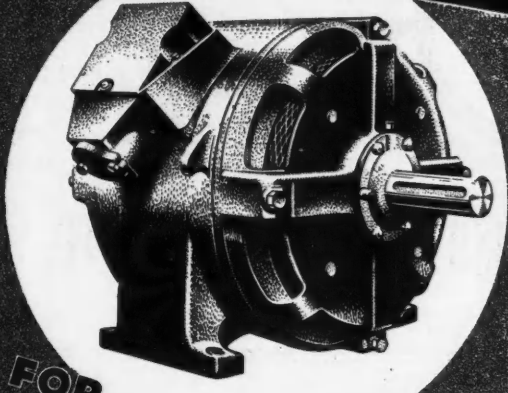

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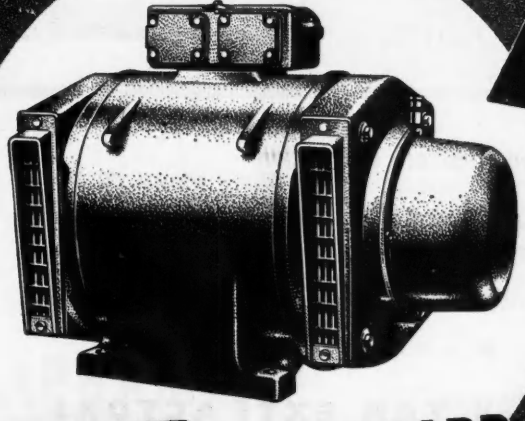

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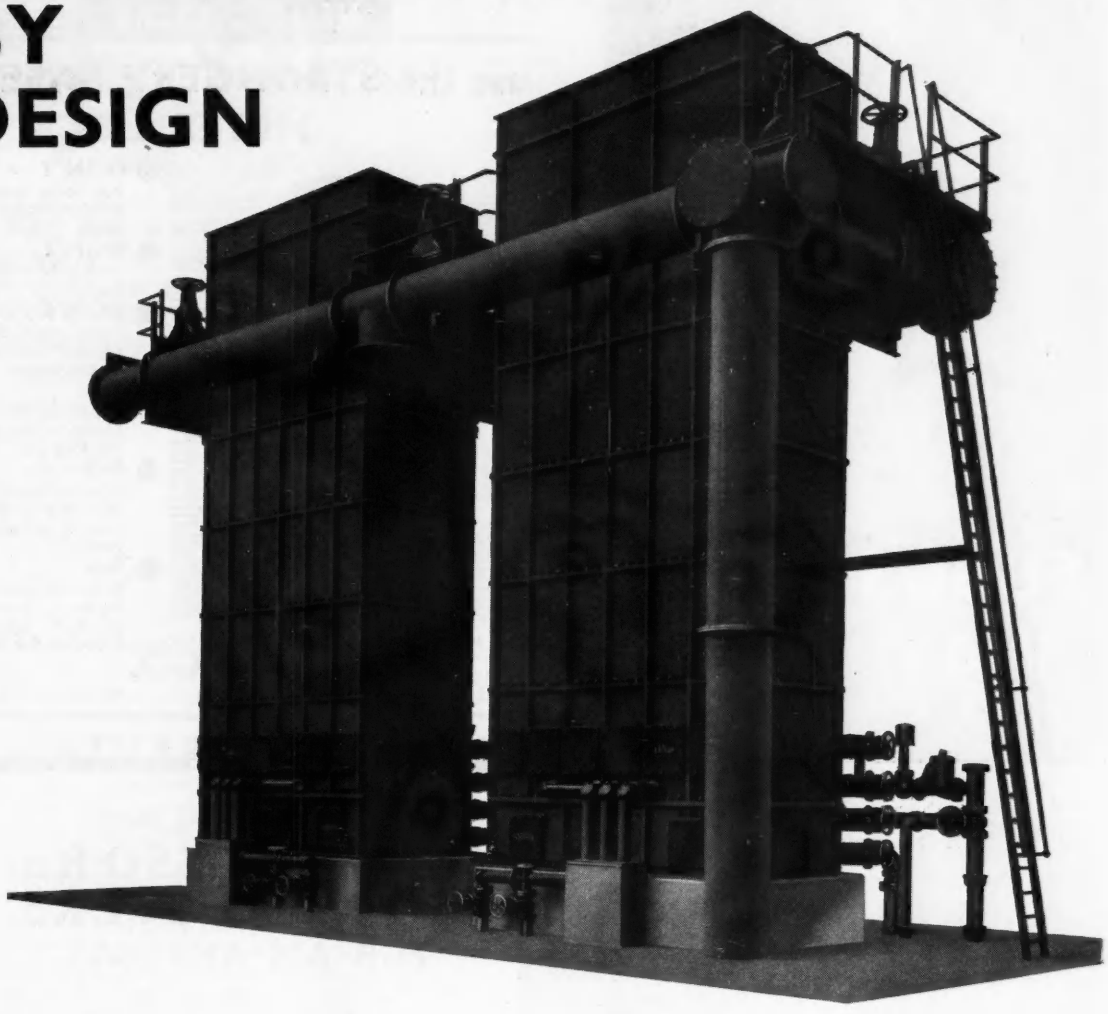

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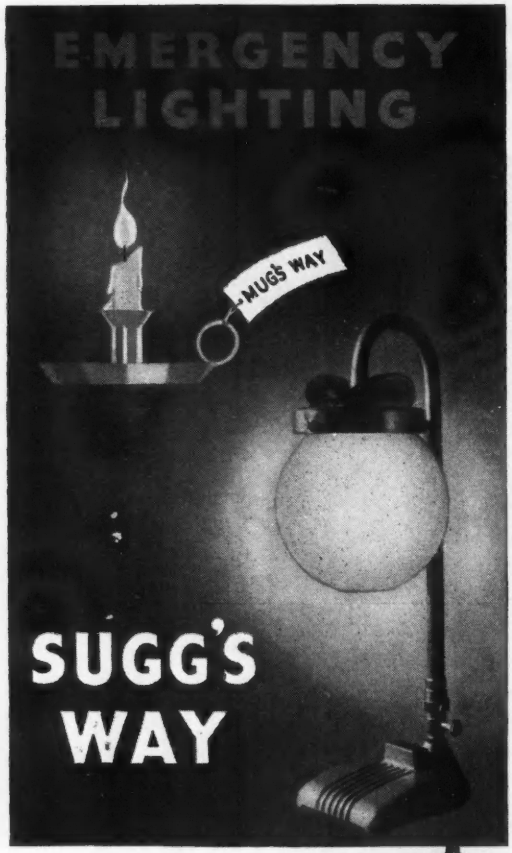

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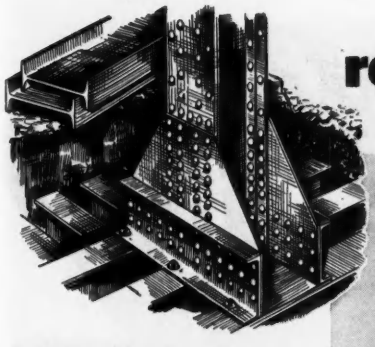

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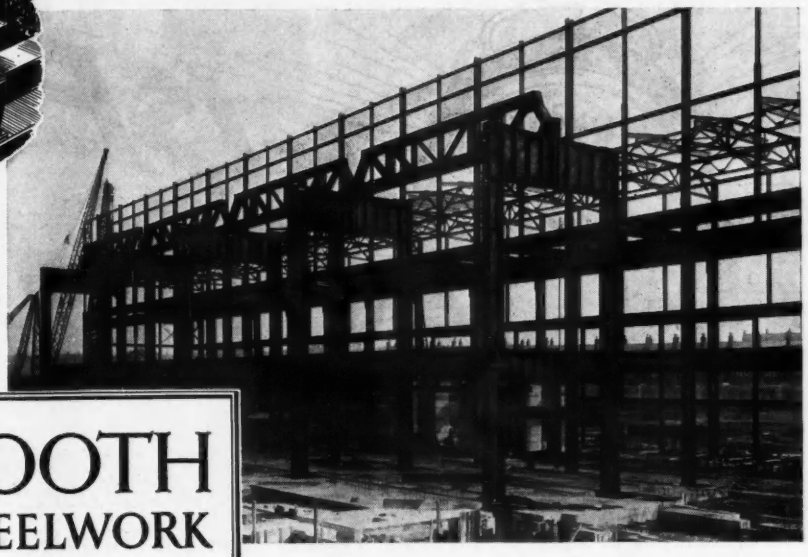

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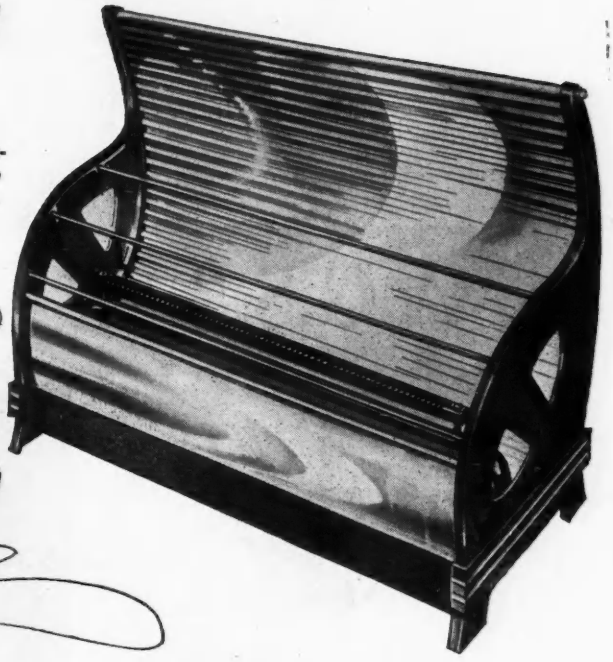

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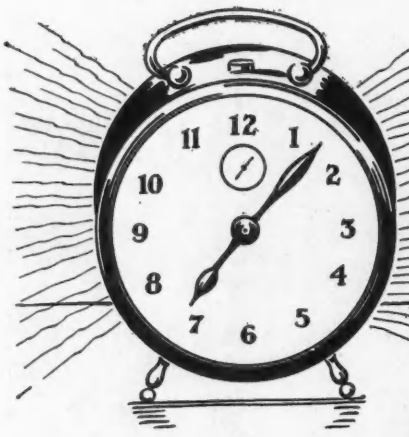

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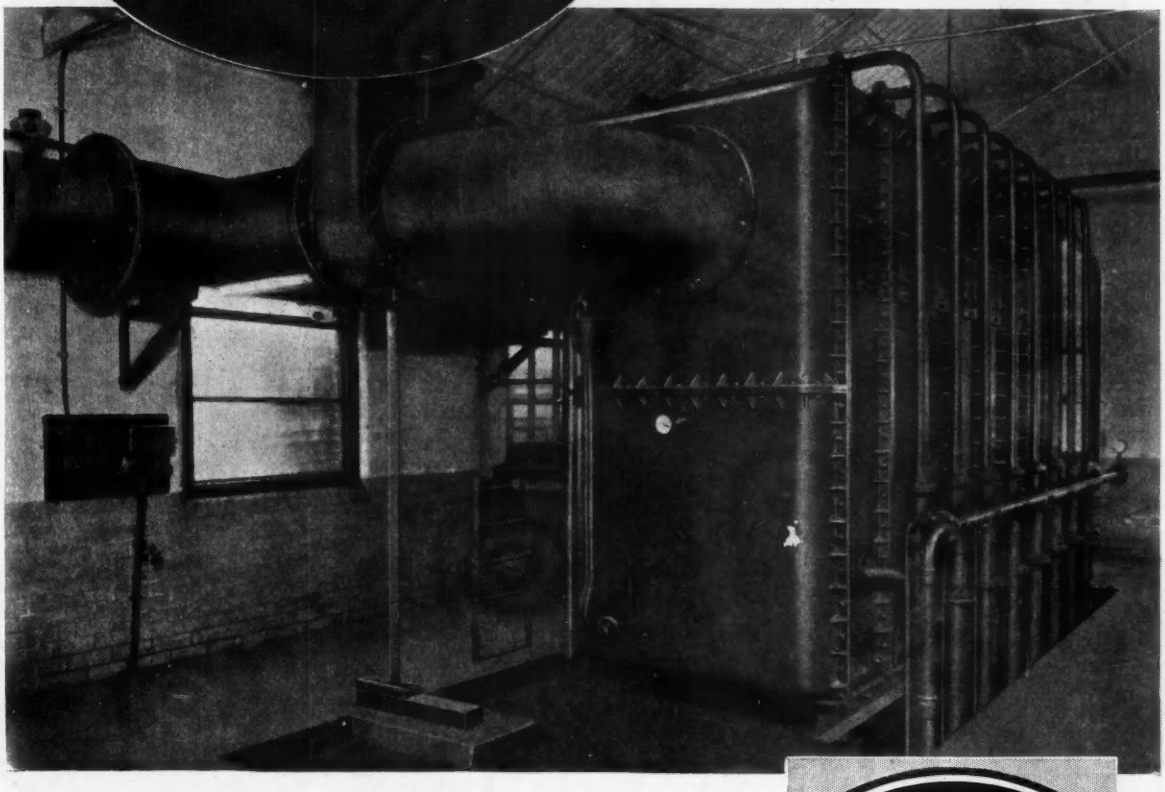

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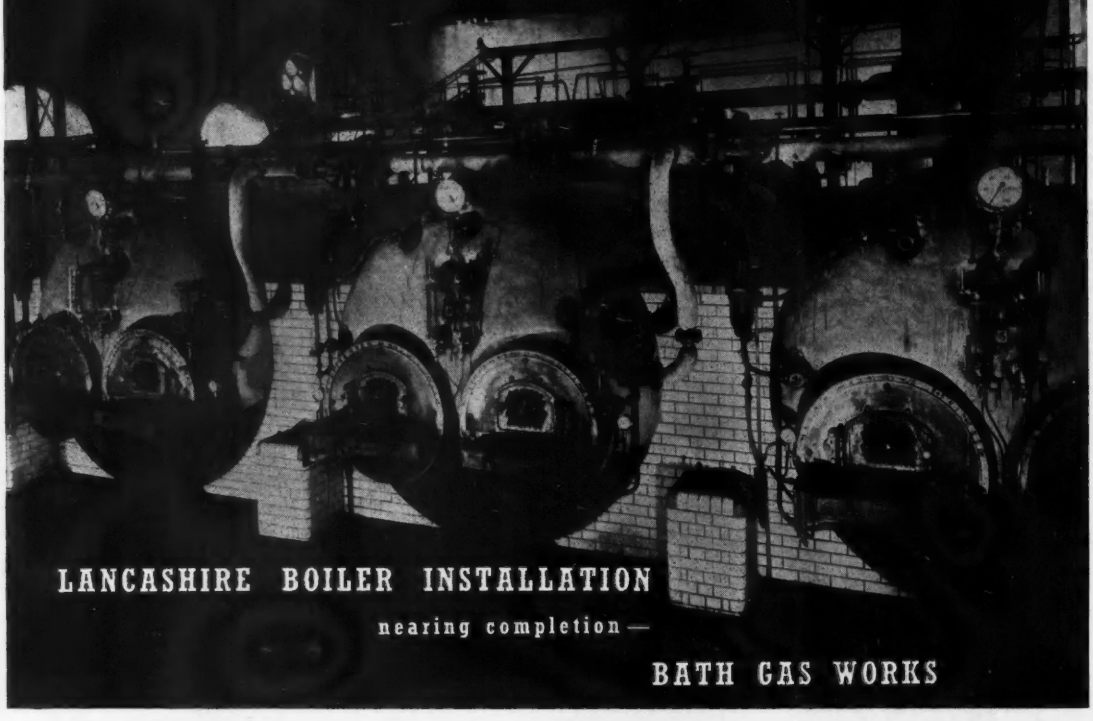

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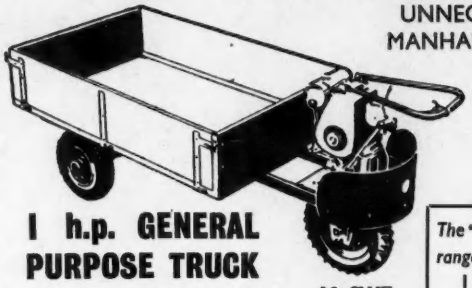

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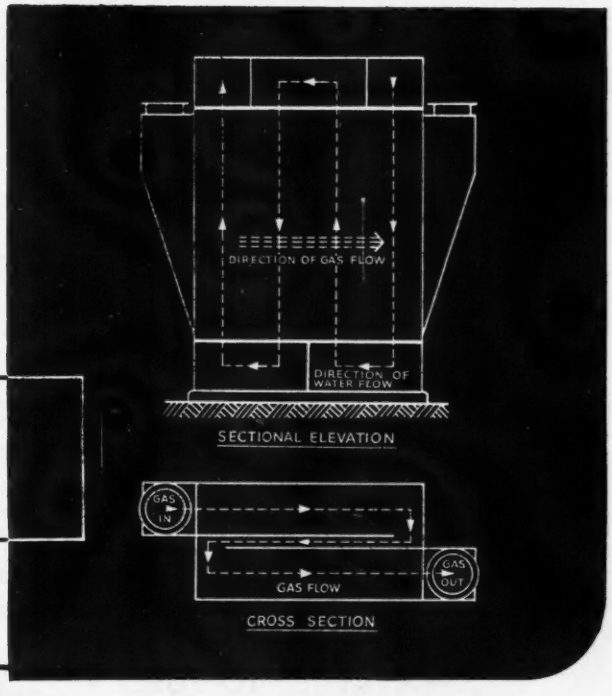

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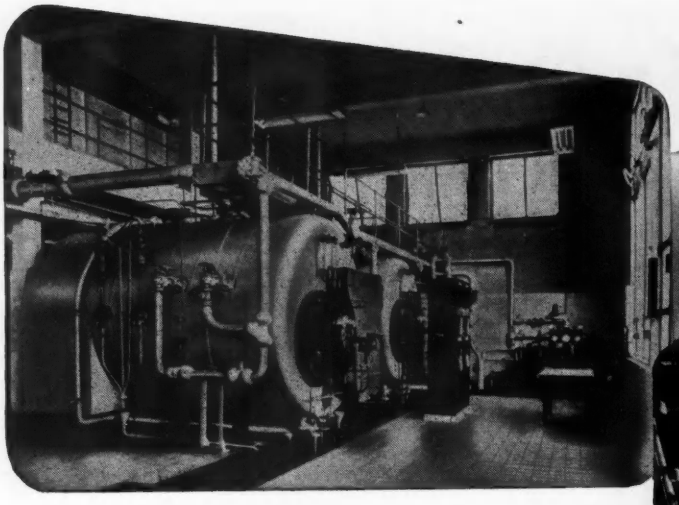

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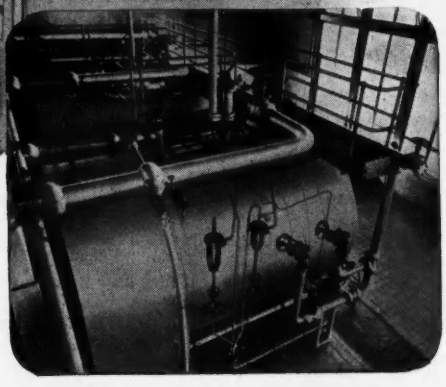

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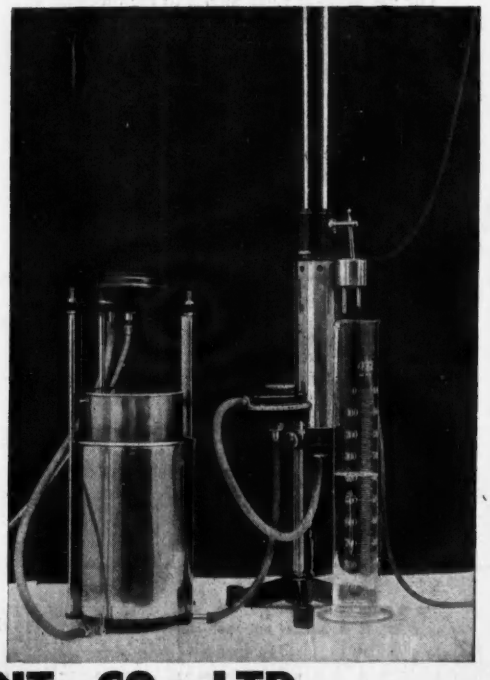

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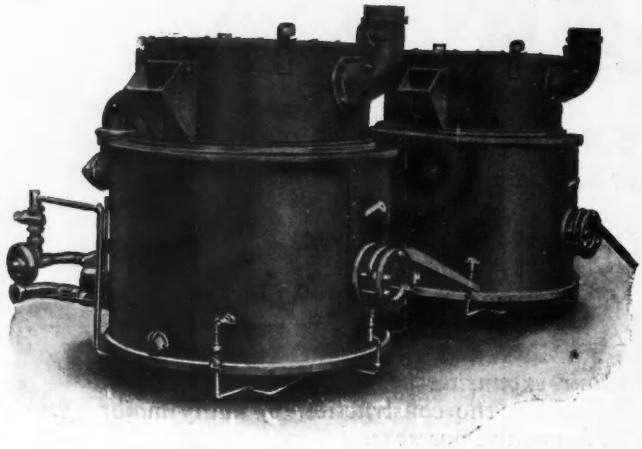

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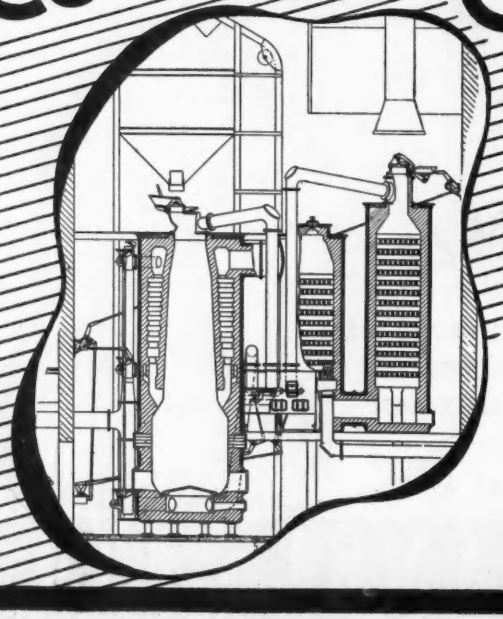

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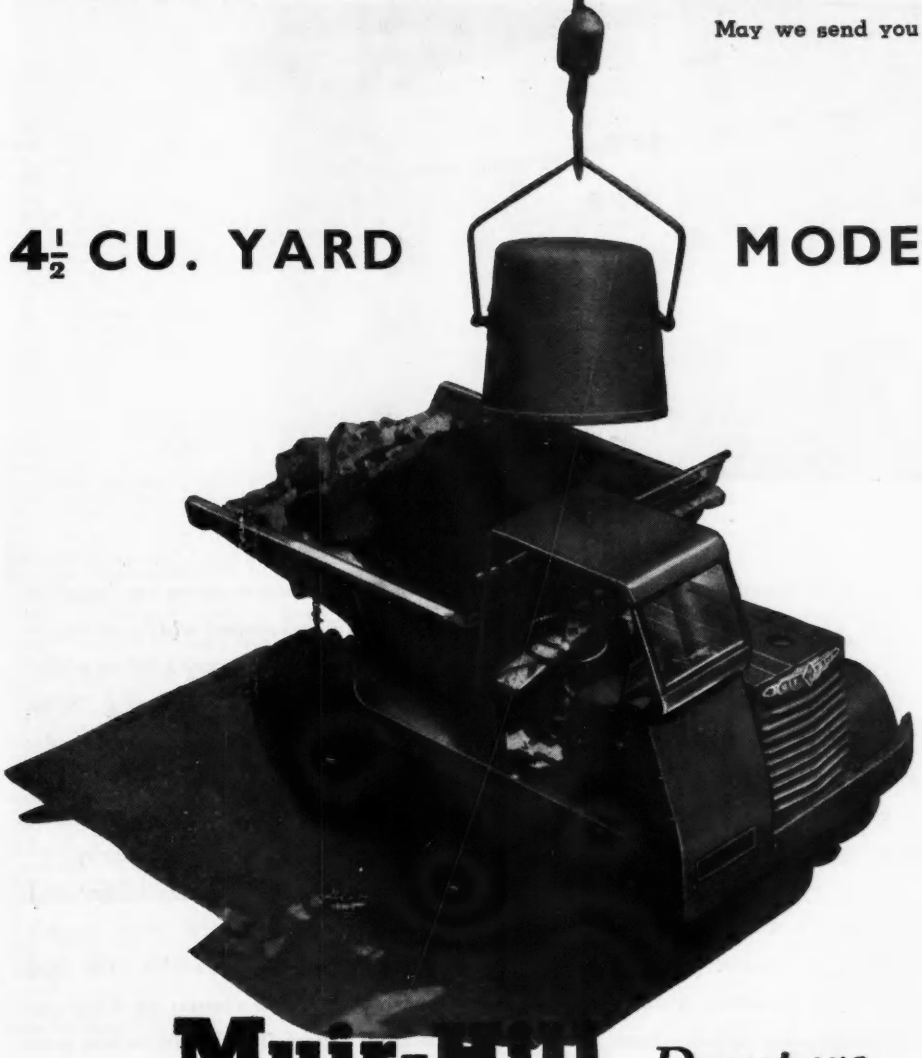

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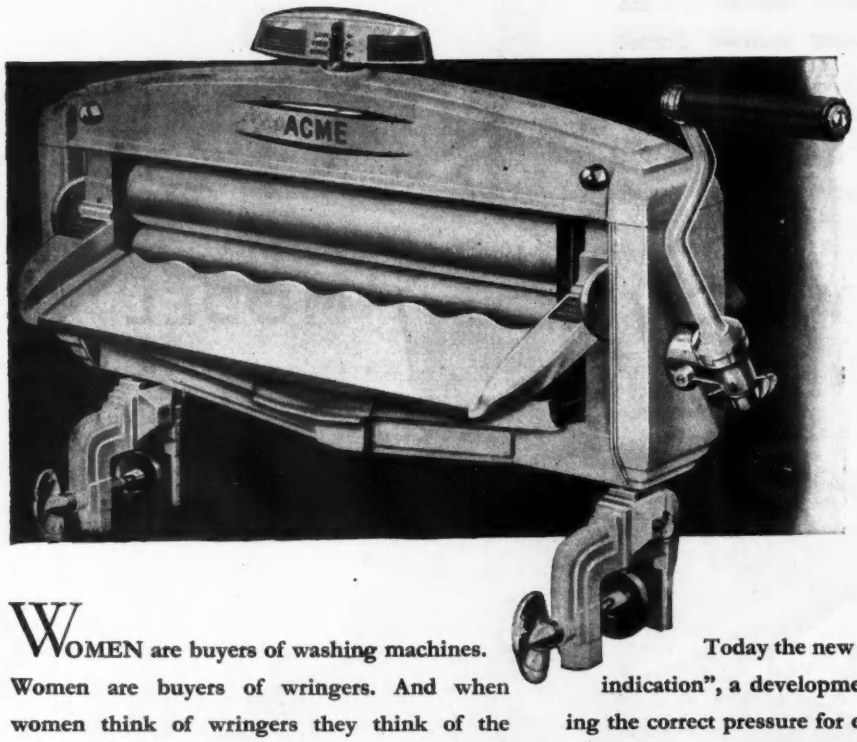

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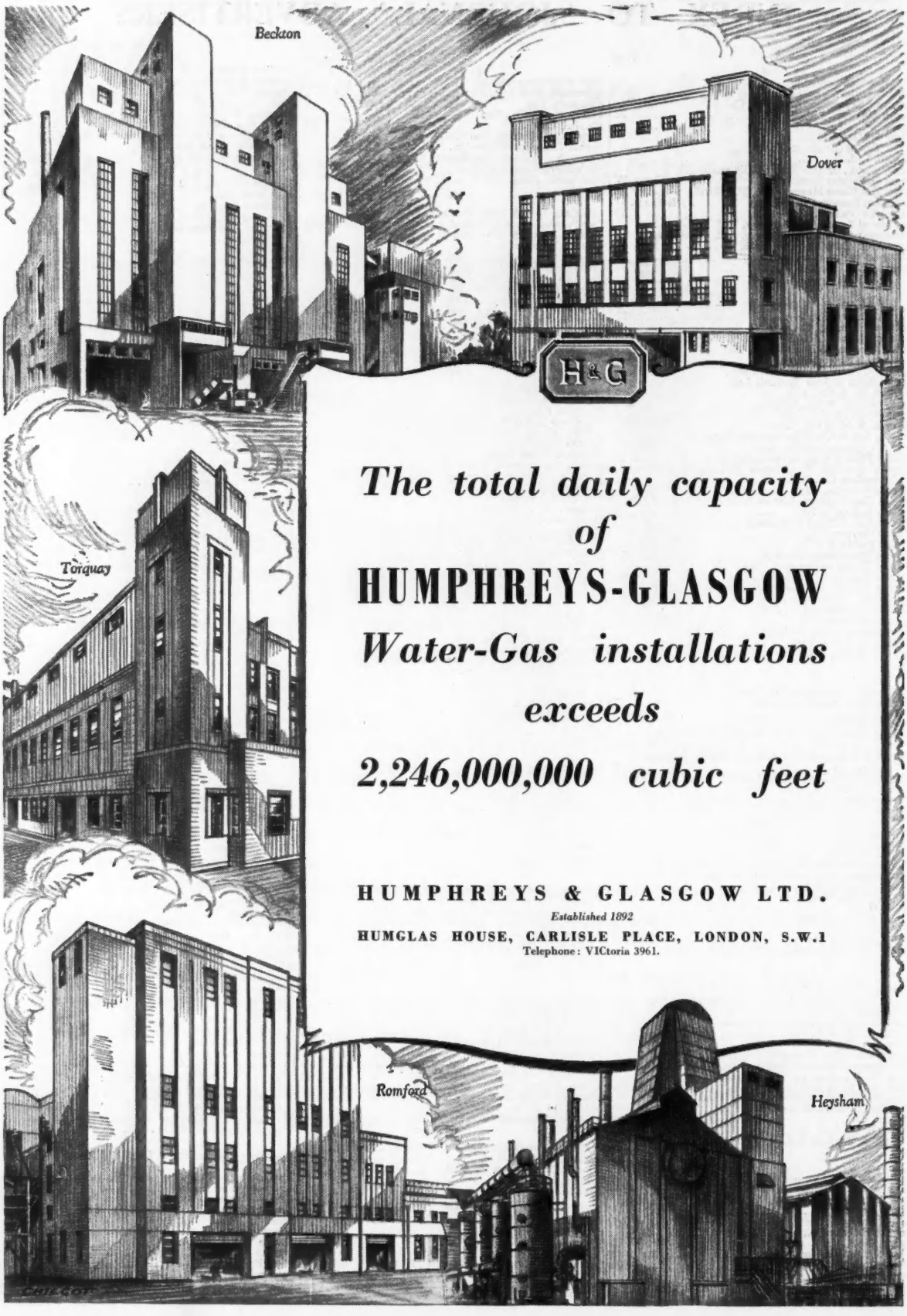

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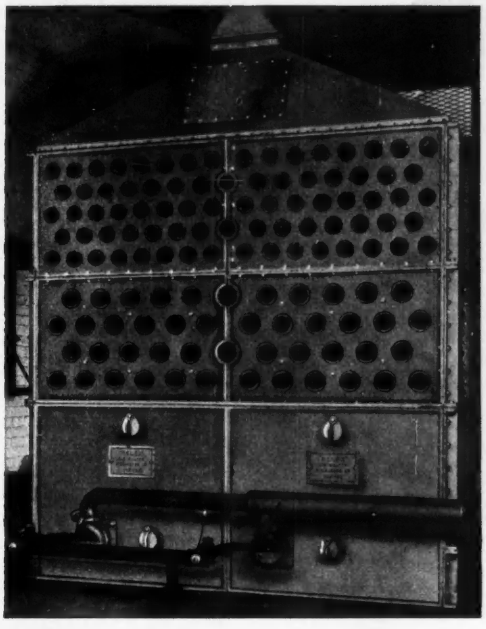

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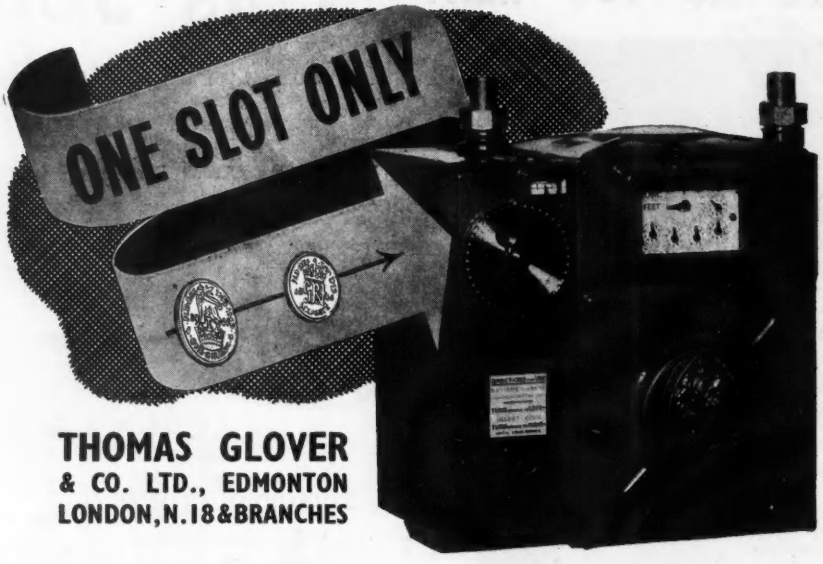

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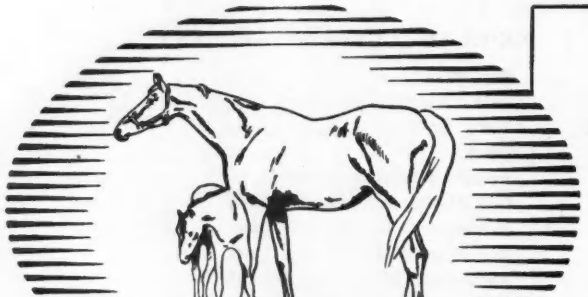

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1951

GAS JOURNAL

VOL. 268. NO. 4609 103RD YEAR OCTOBER 3, 1951

A GAS GRID MILESTONE

FUEL and power history was made on September 20, when the Nantgarw coke ovens of the National Coal Board were inaugurated. Not only is the plant the first major undertaking on an entirely new site to be completed by the Coal Board, but it marks also the culmination of a great co-operative effort by two of the nationalised fuel industries inasmuch as the eastern South Wales gas grid of the Wales Gas Board will, when the plant and gas distribution system is completed, take 18 mill. cu.ft. of gas per day from Nantgarw alone. Supplies actually started a few days before the ceremonial opening, but they are at present limited by the available connections. It is fitting that this development should have taken place in South Wales, for the area led the country in the use of coke oven gas for public supply in 1907, when the Powell Duffryn Company contracted with the Rhymney and Aber Valleys Gas and Water Company to deliver gas from the Bargoed coke ovens. The proportion of the total coke oven gas made which is used either in steelworks or by gas undertakings is higher in Wales today than in any other area in Great Britain, although approached closely by Lincolnshire, Northamptonshire, and Essex. In Wales in 1949 about 70% of the coke oven gas made was used in steelworks or sold to gas undertakings, compared with an average of 50% elsewhere.

In a paper to the South Wales Section of the Institute of Fuel last April, W. R. Branson, Planning Engineer, and W. T. Hird, Distribution Engineer, of the Wales Gas Board, recalled that some time prior to nationalisation the Minister of Fuel and Power set up two committees to enquire into the utilisation of coke oven gas in South Wales, and that in 1948 those committees recommended the construction of gas grids to serve the eastern and western parts of industrial South Wales. Although the reports were not formally adopted either by the Minister or by the gas industry in the area, a considerable length of mains had been laid by vesting date, designed generally to serve an immediate purpose but capable of forming part of the grid systems. The Eastern Gas Grid area, to which the new Nantgarw coke ovens are destined to make so large a contribution, includes a total of 26 undertakings, many of whose manufacturing plants will be closed down when the grid is in full operation. By vesting date 41.4 miles or 30.5% of the 136 miles of main included in the grid proposed by the working committee had been laid, and a further 9.95 miles had been authorised by the Wales Gas Board or its predecessors. Construction of the Nantgarw plant had been started, in anticipation of being completed by the spring of this year, but no preparation had been made for the sections of the grid from Nantgarw to Cardiff, Caerphilly, and Pontypridd, without which the gas from Nantgarw could not be distributed. After the presentation of the working committee's reports the National Coal Board intimated that it was planning a new coke oven plant at Cwm Colliery, two miles south of Pontypridd. The changed availability of coke oven gas which would result from this led the Gas Board to review the report in the light of the new proposal. A revised scheme was approved in October, 1949, and orders were placed for materials so that main-laying could start at the earliest possible moment.

In order that a sufficient length of mains could be laid in time to take gas from the Nantgarw ovens on completion, and also to supply the gas to those districts where additional quantities of gas were urgently needed, seven other area gas boards agreed to defer pipe-laying programmes so that pipes could be diverted to this grid area. As a result of this generous co-operation, pipe-laying began in April

of last year and has continued steadily since then. It was found possible to arrange the main-laying programme to enable bulk supplies to be given to some undertakings in advance of the completion of the Nantgarw ovens. The first section of the main-laying programme to cover the distribution of gas from existing coke ovens and gasworks and the gas now becoming available from Nantgarw comprises 97 miles out of an ultimate total of 167.5 miles. Between vesting date and the end of March, 1950, only 3.3 miles were added to the 41.4 miles previously laid; from April 1, 1950, to July 31, 1951, 38 miles were laid, bringing the total to 82.7 miles. Pipe deliveries to enable the first section to be completed have been arranged and the work is proceeding to schedule. Authorisation has been received and orders placed for the pipe necessary to complete the full scheme, and provisional arrangements have been made for the work to be carried out should sufficient gas be purchased.

In the paper to which we have referred, the authors also described the work that was being done in the Western Gas Grid area, where the scheme provides for the laying of a total of 68 miles of main, of which about 40 miles have been completed. It is intended that the two grids should eventually be linked to obtain additional security against breakdown and to enable plant to be operated with the maximum economy. The inter-linking main does not, however, form part of the present scheme, but will be added when it is felt to be justified by developments. It is worthy of note that so far as the size and capacity of the mains are concerned, the whole scheme is based on the anticipated gas demands of 1970. Grid mains, when properly laid and adequately maintained, have an estimated life of 30-45 years. Mains sizes have been based on the most economic combination of main size and pumping pressure for the flows in 1970, and the pumping pressure on the maximum day in 1970 is calculated to be approximately 20 lb. per sq.in.

COPING WITH DEMAND

THE Irish Gas Association showed good judgment in inviting Mr. H. S. Cheetham, of Humphreys and Glasgow, to address the annual meeting this year, and they were fortunate in gaining his consent. In the event Mr. Cheetham recapitulated the thoughtful arguments which he set out in a paper two years ago (*Journal* of May 24, 1949) to what was then the Eastern Association of Gas Engineers and Managers. In that paper he outlined the improvements and developments in water gas plant design, discussed relative costs of water gas and carburetted water gas manufacture and considered the economics of these gases with coal gas for town supply. As we said at the time, changed circumstances—far-reaching changes in industrial conditions as well as in home life—have led to a demand for gas far in excess of the immediate possibilities of supply, and this during a period of greatly increased cost of coal and hence coke, the seriously increased cost or, indeed, non-availability of labour, and the vastly enhanced cost of materials for gas-making plant construction in all its forms. The problem of the gas industry, in Ireland as elsewhere, is to do all it can to satisfy public requirements, having fulfilled its priority obligations. The problem resolves itself into the best means to adopt—the combination of gas-making plant which will yield the best overall economic results while best coping with demand. It is, of course, a paramount problem; and Mr. Cheetham's contentions have even more cogency today than they had when the paper to which we refer was first put forward.

The Irish gas industry has its peculiar difficulties. Coal supply—or lack of it—is the most important, but there are others hard neither to seek nor appreciate. Apart from a small handful of major undertakings (these either municipally or company owned) the gasworks of Ireland are small, scattered, and isolated to an extent quite different from the country gasworks of Great Britain. The plant installed for making gas in these small undertakings uses so much coke for keeping-up heats in the settings that there is not a great deal of coke either for sale or for use on the works. There is a field here for easy improvement from the theoretical angle, though in practice it is not quite so simple. We feel, however, that much could be done and that the small undertakings have much to gain by seeking the advice and the help of the manufacturers of gas-making plant of all types. That is one direction. Another lies in a greater measure of understanding between isolated undertakings and more reliance on mutual assistance. This implies some form of common platform for discussion at regular intervals on an informal basis—in other words, some type of co-ordination at present not in being in Ireland. We say this without disparaging the work of the Irish Gas Association.

We refer to these peculiar difficulties in the light of Mr. Cheetham's paper. Not only from the paper, not only from the discussion, was it obvious that producer gas and water gas, enriched or otherwise, can come to the aid of the small works as well as the large works. Plant of a very wide range and of an equally wide range of application is available today, offering flexibility and often, no doubt, an answer to current problems in many cases. This flexibility was touched upon by the author in his reply to the discussion. *Inter alia*, Mr. Cheetham mentioned the use of heavy oil for gas-making, and he referred to the process which his firm has developed whereby gas of a high calorific value—600 B.Th.U. or more—can be produced, and he also spoke of the use of water gas plants for the manufacture of producer gas. The paper as a whole is indicative of the new outlook, and it will, we know, be studied with profit by those who have to deal with gas manufacture in Ireland.

KING'S MANUAL

SECTION 5, consisting of Chapter VII, Refractories, and Chapter VIII, Coal and Coke Handling, and practically completing that portion of the Manual which deals with gas-making processes and plant, is now published. It will be followed very shortly by Section 3, Water Gas and Complete Gasification, Section

4, Coke Ovens, and Section 1, Carbonisation and Horizontal Retorts, in that order.

Chapter VIII is a revision of the corresponding chapter in the original edition. The subject matter is selected rather to show principles than to exhibit details of construction. It is pretty closely confined to the continuous as opposed to the intermittent handling of material, to the conveyor and elevator rather than the crane and skip. The chapter makes no claim to emulate in completeness such a monumental work as 'The Mechanical Handling and Storing of Material,' by George Frederick Zimmer, nor in fullness and detail the specialised book on 'Bell Conveyors and Bell Elevators,' by F. V. Hetzel and R. K. Albright. Both of these works are freely drawn upon, though it may be claimed that the gas industry was using mechanical handling as early as any of its contemporaries. The band conveyor, for instance, has been established for the handling of coal in the gasworks for over 60 years.

There is much to be said for the continuous handling of such materials as coal and coke, the method of the conveyor and elevator. In machines of the continuous type, Zimmer remarks, 'the material to be handled is evenly distributed over the entire length of the elevator or conveyor; the structure is thus only burdened with a comparatively light weight, an effect which permits of a relatively light construction of the mechanism and its supports.' The intermittent machine, on the other hand, 'must lift or convey a concentrated load consisting of the material handled and the receptacle in which it is carried, and necessarily requires machinery and structure of heavy description and of more solid construction.' There is time lost in returning the empty receptacle to the feeding point. Another argument in favour of the continuous machine is that the moving parts are balanced except for the weight of the material actually being handled; it is therefore generally free from reciprocating motions likely to set up destructive vibration in the supporting structure; and power consumption in overcoming the inertia of heavy moving parts is reduced to a comparatively low figure. Compared with grabs and bulldozers, though the use of these may be justified in some circumstances, the conveyor-elevator is vastly less destructive of the material handled and is on all counts a more 'elegant' means of handling.

In the particular case of the handling of materials in the gasworks, one is struck by the sharp difference in the physical characteristics of the two principal materials, coal and coke, to be handled. Coke is a most abrasive material, very destructive to all moving parts with which it comes into contact. It is very friable, particularly in the larger sizes, and is rapidly de-graded in size when caused to flow over metal surfaces or when agitated in bulk. Coal, on the other hand, is free from these troublesome properties. What breakage does occur in handling, at any rate in the continuous type of machine, is not generally detrimental and coal dust is not particularly or even generally destructive in bearings or moving parts. There is therefore more justification for handling coke than coal by intermittent means in bulk, while at the same time there is greater difficulty in guarding against degradation in this as in every other form of coke-handling plant.

Chapter VII, Refractories, is new. It is, we think, a complete summary of the information available on this most important subject so far as it relates to gasworks practice. Finality has no more been reached here than in any other of the vital links in the gasworks process. Already the Standard Specifications are under revision; it was obvious, for instance, that the ranges of silica content of the several grades were too wide, a defect most marked in the definition of siliceous materials where a difference of a very few per cent. of silica may result in a big difference in behaviour under working conditions.

Much of the subject matter of this chapter has never before been brought together in contact with the scientific treatment of refractories. It epitomises with, we think, a great measure of success that body of practical retort-house lore which has grown up among carbonisers and retort constructors over the last 60 years. The space allotted to scurfing, for instance, is a measure of the importance which the carbonising engineer, both constructional and operational, attaches to this essentially practical operation. The new method of 'downward scurfing,' has done much to reduce the risk of local over-heating.

The corrosion and erosion of refractories is a matter, in the first place, for the manufacturer and his laboratory workers in research and control. In a material which works so near to the danger point it is not surprising that there is no finality here. The construction of the setting and its metallic bracing is an art which calls for close and continuous collaboration between the physicist, the designer and the builder to secure lasting stability in a structure in which large and very varied movements of expansion and contraction must of necessity take place at temperatures, in the hottest zones, not many degrees below that of dangerous softening of the material.

The subject of jointing cements is receiving the careful attention which it demands. 'Joints are rightly considered to be the weakened portions of high-temperature structures.' Apart from the care necessary in the selection of the best jointing cement for a given situation, the building operation itself, the determination *in situ* of the correct thickness of joint, the care in the cutting and preparation of the pieces to be joined, call for a high degree of skill and conscientious workmanship, a niceness of touch, on the part of the retort setter himself.

The new methods of retort repairing are described. Two of these, known shortly as 'retort welding' and 'air-borne sealing,' are now regularly used by the maintenance engineer, in addition to older methods of spraying, to keep retorts tight and to prolong their working life.

It is confidently anticipated that this chapter will prove to be of great assistance to the student and of considerable interest to the experienced carbonising engineer.

STANDARDISATION AND STREET LIGHTING

DESPITE the protests of those who regard the preservation of individualism and the stemming of regimentation as an essential factor in making life worth living, standardisation moves inexorably forward. That the conflict has now reached the Association of Public Lighting Engineers, whose annual conference was held at Brighton last week, will occasion little surprise. When at the Association's Open Forum at Bournemouth last year a member spoke in no uncertain terms against too rigid and intensified standardisation in street lighting practice, we had a feeling that we had not heard the last of the subject. Thus it was no surprise to hear the new President, Mr. H. Pryce-Jones, refer to the matter in his address. That he did so in a highly tactful manner was in keeping with his presidential position, but listeners were left in little doubt of where his sympathies lay. He admitted that to reduce the art of street lighting to the level of the mere installing of 'off the shelf' standardised equipment would surely blunt interest and incentive, and lower the quality of the human intake to the street lighting world. But, he said, a desire for individual choice should not blind us to the defects and limitations which currently exist in the lighting systems of the country. The man in the street has a right to expect a good standard in return for the rates he has to pay. To use the President's own words: 'Variety is said to be the spice of life, but a survey of many street lighting installations inclines one to the view that at times this particular dish is somewhat overseasoned.'

He considered that with the surprising number of alternative shapes in which concrete and steel are presented in order to achieve the basically simple task of supporting a lantern 15 or 25 ft. above the road surface . . . a closer measure of æsthetic agreement could surely have been reached with economic advantage to all.' And similarly with lanterns, a reduction in variety should bring a lowering of initial and maintenance costs. Mr. Pryce-Jones' argument is economically sound, but we feel for it scant sympathy. It seems difficult to imagine that the many types of equipment at present in use place upon the shoulders of the ratepayer an unnecessarily heavy burden, provided—and this is the crux of the matter—that the service rendered by all types of equipment is satisfactory. A reasonable variety in style of column and lantern is surely a good thing both for the public authority purchasing the equipment and also for the manufacturer, since these fittings do much to influence the character of the road in which they are placed and provide a source of interest for the innocent passer-by on our streets. Where we *do* agree wholeheartedly with the speaker, however, is in his plea for some means of co-ordination whereby violent changes in the type and/or colour of lighting in adjacent sections of the same road may be avoided. Would it be unkind to suggest that since the President is himself Mid-Sussex Manager of the South Eastern Electricity Board, the remedy for this colour chaos might lie nearer his doorstep than our own ?

COMBUSTION ENGINEERING CONFERENCE

No alteration is to be made in dates or arrangements already announced by the Combustion Engineering Association for their conference on October 9 and 10 at the Dorchester Hotel. Mr. James Craig, Director, points out that whatever the result of the General Election, the fuel and power shortage has to be faced. The Minister of Fuel and Power has confirmed that he will attend and address the conference.

Letters to the Editor

PRODUCTION MATTERS

DEAR SIR,—In your report of my remarks on Mr. A. C. Rea's paper in the *Journal* of September 26, I am disappointed that you have omitted my main point. When I stated that we in Scotland were always looking for extra B.Th.U. to enrich our gas I went on to say that I was about to experiment in the substitution of neat oxygen for atmospheric air, which is normally admitted to the gas stream to assist the oxide purification process. I also offered the opinion that, considering the possible price at which oxygen could be obtained, the use of oxygen in this way might be made to pay, because it would permit the extraction of benzole without decreasing the gas make per ton of coal at inlet benzole plant.

In Mr. Rea's reply to my remarks you quoted him as having stated that air control was essential for good purification, but he continued to the effect that there was probably something in my idea if the price of oxygen were low enough.

Yours truly,

GEORGE E. H. KEILLOR,
District Manager and Engineer.

Lanarkshire Group,
Airdrie District, Airdrie.
September 26, 1951.

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GAS INDUSTRY AND PUBLIC LIGHTING

DEAR SIR,—I have just returned from the annual conference of the Association of Public Lighting Engineers, at which Mr. P Crawford Sugg read an excellent paper on 'Design and Use of Street Lighting Equipment,' and I must say that he put forward the case of gas lighting in a most convincing way. The paper was well received and the attendance of lighting engineers was good.

My concern was that I only saw very few representatives from any section of the gas industry present. The first conference of the Association was held in Leeds when I was President. It was apparent from the inception that the gas industry took little interest in the proceedings and the lack of gas interest was again very apparent at Brighton.

We who have the interest of the gas industry at heart, were always urging, not only to get increased gas loads, but in particular to retain existing ones, especially those which were open to us when our mains were working at the least capacity.

As an old street lighting engineer, I was amazed at the strides that had been made in the efficiency of street lighting equipment, but I repeat, my great worry was the absence of interest taken by the gas industry, pretty well the whole of the Council of the A.P.L.E. being represented by electrical interests. It is needless to say that gas will give entire place to electricity as a matter of course, unless the gas industry really wants to make some effort to retain this most lucrative load.

Mr. Sugg brought out very clearly that the efficiency of gas lighting which has been achieved could only be maintained by greater attention to the cleaning of the lamps and maintenance, cleaning being of paramount importance. He has rendered a great service to the gas industry by his paper and also through his association with the Society of British Gas Industries as a member of the Council of the A.P.L.E.

So now, you Gas Chaps, see you don't let gas down!

Yours faithfully,

C. S. SHAPLEY.

235, Alwoodley Lane,
Leeds.
September 27, 1951.

Personal

Mr. Ronald H. Thornley has been appointed managing director of Ideal Boilers and Radiators, Ltd.

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Dr. A. Rees Jones, B.SC., PH.D., Technical Manager of the Parkinson Stove Co., Ltd., and Monitor Engineering & Oil Appliances, Ltd., has been appointed to the boards of those companies.

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Councillor A. B. Constable, M.A., B.SC., has been appointed by the Minister of Fuel and Power to be Chairman of the South Eastern Gas Consultative Council in succession to the late Alderman A. C. Warwick, J.P. Councillor Constable, a former Grammar School Master, has been a member of the Dover Borough Council since 1945. He has been a member of the Gas Consultative Council since its inception.

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The North of England Section of the Institution of Gas Engineers has made a presentation to **Mr. A. S. Middleton** in recognition of his seven years as Secretary of the North of England Gas Managers' Association. Mr. Middleton was Secretary and Manager of the Durham City Gas Company before nationalisation. He is now an Assistant Secretary of the Northern Gas Board. The gift, a wrist watch, was handed over by Mr. J. R. Bradshaw, Deputy Chairman of the Gas Board.

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Miss P. Dodd has been appointed principal home service adviser to the East Midlands Gas Board. Miss Dodd, who has been Leicester Home Service Adviser since 1946, holds a first class diploma of the Institution of Household Management. She trained at Leicester Domestic Science College before joining the W.A.A.F., in which she served for four years. She left with the rank of Flight Sergeant, having taught domestic science subjects for the last 18 months to girls coming out of the force. Miss Dodd took up her appointment on September 1.

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Miss L. M. Fordham (Rugby rental department) is the first woman in Warwickshire to receive a long service award from the West Midlands Gas Board. She was one of seven employees of the Rugby district, all with more than 30 years' service, who received gifts of their own choosing at Rugby recently. Miss Fordham has served the industry for 32 years. The presentations were made by the Manager of the Warwickshire division, Mr. A. Allen. The six men were **Mr. V. L. Evans** (35 years' service), shift foreman; **Mr. G. H. Hill** (33 years), storekeeper; **Mr. F. A. Bryan** (32 years), shift foreman; **Mr. J. T. Munday** (31 years), yard foreman; **Mr. F. C. Smart** (31 years), blacksmith; and **Mr. S. Vause** (31 years), district inspector.

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Mr. Alex. W. Lee has been appointed by the Minister of Fuel and Power to be Deputy Chairman of the West Midlands Gas Board, in succession to Mr. G. A. Matthews, J.P. Mr. Lee has been a member of the Board since it was set up, and before the nationalisation of the gas industry was General Manager and Secretary of the City of Birmingham Gas Department. To restore the membership of the Board to its previous strength the Minister has also appointed **Alderman George E. Hodgkinson,** O.B.E., to be a part-time member. Alderman Hodgkinson, a former Mayor of Coventry, was for 16 years a member of the Coventry Corporation Gas Committee, during which time he served for six years as Vice-Chairman and three years as Chairman of the Committee.

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Mr. J. H. Gibbons, M.INST.GAS E., has been appointed Technical Assistant to Mr. Arthur Forshaw, of R. & A. Main, Ltd. Mr. Gibbons was educated at St. Joseph's College, Westport, and joined the Croydon Gas Company in 1925 as a general assistant in the distribution and sales department. After passing the Institution of Gas Engineers' higher grade examination in gas supply in 1935, he was appointed technical assistant to the sales and service department, in which capacity he continued to serve until the Croydon Gas Company was merged in the South Eastern Gas Board, and thereafter with the Board until taking up this new appointment. Always interested in education with particular relation to the gas industry, Mr. Gibbons is the examiner in gas supply technology for the City and Guilds of London Institute and was for 15 years senior lecturer in gas supply practice at the Croydon Polytechnic.

Dr. N. E. Rambush, D.SC.(HON.)., M.I.CHEM.E., Managing Director and Vice-Chairman, has been elected Chairman of the Power-Gas Corporation, Ltd. The vacancy was caused by the retirement of Mr. Wilfred Beswick, who had been chairman since 1939. Dr. Rambush joined the Power-Gas Corporation, Ltd., in 1918, as Chief Engineer. Nine years later he became Technical Manager, and in 1931 was appointed General Manager to the Power-Gas group of companies. He became a Director of Ashmore, Benson, Pease & Co., Ltd., in 1933, and in 1939 was appointed Managing Director of the Power-Gas Corporation and its subsidiaries, having been joint Managing Director with Mr. Beswick during the preceding year. Dr. Rambush has been Vice-Chairman since 1947. His book, *Modern Gas Producers,* published in 1923, still has wide recognition as one of the major works on the subject, and in June, 1948, in recognition of the distinction of his work in the application of Science to the gas industry, he was awarded the degree of D.Sc. (Honoris Causa) of Durham University.

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Mr. Hamilton Davies, London Manager of Radiation Ltd., retired on September 30 after 40 years' service in the gas appliance industry. After graduating at Leeds University in 1907 he became Research Assistant to Professor Bone on the explosive combustion of hydrocarbons at high pressures in the Department of Fuel Technology at the University, later continuing research on the practical applications of surface combustion under Professor Bone's direction at the Carlton Works of Wilsons and Mathiesons, Ltd. In 1912 he joined the staff of the latter firm as Technical Chemist engaged in the development of gas appliances. This was a period when the need for trained technicians in the appliance industry was first appreciated. After military service during the 1914-1918 war, Mr. Davies rejoined Wilsons and Mathiesons, becoming a member of the Radiation technical organisation under Dr. Harold Hartley when this was created on the formation of Radiation Ltd., in 1919-1920. Mr. Hamilton Davies played a conspicuous part in the development of the New World cooker with Regulo control. In 1925 he left Leeds to join the Radiation research organisation in London and later became Personal Assistant to Mr. H. James Yates, the first Chairman of the Group. Mr. Davies held this position until Mr. Yates' retirement and subsequently took over the duties of London Manager.

1951 'Journal' Directory

THE following changes have been notified during the past month. To keep the information in the 1951 edition of the *Gas Journal Calendar and Directory* up to date readers are invited to note these alterations (together with the appropriate adjustments relating thereto in the 'Personnel' section, pp. 137-152):

Page 21.—NORTH EASTERN GAS CONSULTATIVE COUNCIL: Add Mrs. P. Keyzer (Wentbridge), *Member.*

„ 22.—SOUTH EASTERN GAS CONSULTATIVE COUNCIL: Councillor A. B. Constable, M.A., B.SC. (*Member*), becomes *Chairman* vice Alderman A. C. Warwick, J.P. (deceased).

„ 69.—NORTHERN GAS BOARD: Add Langton Highton, *Part-time Member.*

„ 111.—WEST MIDLANDS GAS BOARD: Alex. W. Lee, ASSOC.INST.GAS E. (*Part-time Member*), becomes *Deputy Chairman* vice G. A. Matthews (retired). Add Alderman G. E. Hodgkinson, O.B.E., *Part-time Member.*

„ 113.—WALSALL: Delete E. A. Goodland, *M.*

„ 178.—WALES AND MONMOUTHSHIRE SECTION: *Chairman:* A. Pickard (Llanelly); *Senior Vice-Chairman:* H. Maycock (Holywell); *Junior Vice-Chairman:* K. E. Tiddy (Carmarthen). Mr. Tiddy remains *Hon. Secretary.*

„ 179.—IRISH GAS ASSOCIATION: *President:* G. Walmsley (Londonderry); *Vice-President:* H. W. Saville (Wexford); *Hon. Secretary and Treasurer:* N. J. Robertson (Dublin).

„ 179.—DISTRICT ASSOCIATIONS: Delete North British and Waverley and add: SCOTTISH ASSOCIATION OF GAS MANAGERS (incorporating North British Association, founded 1862, and Waverley Association, founded 1861): *President,* E. G. Smith (Glasgow); *Senior Vice-President,* R. Cowie (Hawick); *Junior Vice-President,* A. W. Brown (Aberdeen); *Hon. Secretary,* W. Kirk (Motherwell).

News in Brief

The North Thames Gas Board had a highly successful marquee at the recently held Dagenham Three Towns Exhibition, at which many hundreds saw the Board's home service advisers at work giving cookery demonstrations.

One of the Popular Series of demonstrations featuring cooking by gas was presented recently at the Tea Centre, by Miss Main, of R. & A. Main, Ltd. These demonstrations, given twice a day for a period of one week, were under the title 'Snacks and In-betweens' and included the preparation and cooking of such tasty and attractive dishes as savoury flan and fish soufflé, cheese straws and biscuits; as well as the presentation of delightful and out-of-the-ordinary sandwiches. Throughout the period the cooker used was a Main 177-16 in grey-dapple finish.

National Smoke Abatement Society.—At the opening of the Society's annual conference at Blackpool, on September 26, the election was announced of Alderman Professor F. E. Tylecote, of Manchester, as President to succeed Dame Vera Laughton Mathews, former chief of the W.R.N.S. The new President has represented Manchester City Council on the Society for many years, and is a former Professor of Medicine at Manchester University. The re-election of Sir Ernest Smith as Hon. Treasurer, was also announced.

Reactivation of Bone Charcoal.—Messrs. Tate & Lyle, Ltd., request us to correct the statement made in the Editorial of our issue dated April 11 under this heading. They wish us to state that at this stage they have no definite information regarding the refining equivalents of the two types of kiln mentioned nor of their capital costs.

The Trade Statistics for July, 1951, issued by the Central Statistics Office in the Republic of Ireland, show imports of 27,263 tons of gas coal, valued at £129,005 as against 21,279 tons, valued at £98,339 in July, 1950. This brings the total of these imports for the first seven months of 1951 to 157,657 tons, valued at £777,064, compared with 141,557 tons valued at £658,644 in the corresponding period of 1950.

The Institution of Chemical Engineers has been publishing its 'Transactions' in annual volumes since 1923, but to reduce the delay between the presentation of papers and their publication, it has now been decided to publish the 'Transactions' in parts. Vol. 29 (1951) will be published in three parts. The first part has already been published. Part II is to appear in Jan., 1952, and Part III in April. Thereafter, each volume will be published quarterly. Subscriptions to non-members are £2 2s. per volume, post free; 12s. 6d. each for single copies of parts, post free.

A New Gasholder of ¼ mill. cu.ft. capacity, by Newton Chambers & Co., Ltd., was put to work last week at the Ballymena (Co. Antrim) Borough Council gasworks. It is a spirally-guided holder in steel tank.

A New Tar Distillation Plant with an annual treatment capacity of 40,000 tons, is being built by the Vereinigte Oesterreichische Eisen und Stahlwerke in Linz, and is expected to be completed by the end of this year. Products to be made will include road tar, benzole, toluole, xylol, phenol, etc. The plant has been obtained from W. Germany.

That Fish! Mr. Derrick Wilson, Chairman and Managing Director of George Wilson Gas Meters, Ltd., sends us the results of the five annual fishing matches between Works and Staff. The contest ended on September 22 in a draw of two matches each, with total catches of: Works 22 lb. 14 oz. and Staff 25 lb. 10 oz. It may seem curious, comments Mr. Wilson, that although five contests took place, the result was a draw; but this is explained by the fact that on the occasion of the last meeting 12 people sat for three hours in delightful, but rather cold, weather, without the fish recognising that they were desired to co-operate in the sport. As a result—or maybe in view of their previous experiences—not a single fish was caught. These contests have proved extremely happy ones.

Diary

Oct. 4.—Gas Council Industrial Gas Development Committee: 17, Grosvenor Crescent, 9.30 a.m.

Oct. 5.—Institute of Fuel (South Wales Section): 'Fuel Efficiency in the Oil Industry,' M. J. Stradling. South Wales Institute of Engineers, Park Place, Cardiff, 6 p.m.

Oct. 6.—Western Junior Gas Association: Opening Meeting, Swindon. Visit to Gorse Hill Works, followed by Paper by H. Hobbs.

Oct. 6.—Yorkshire Junior Gas Association: Annual General Meeting. 'Large Scale Organisation in the Gas Industry,' Dr. R. S. Edwards, B.SC., A.R.C.S., Chairman, North Eastern Gas Board.

Oct. 6.—Scottish Junior Gas Association (Eastern District): Opening Meeting, Falkirk. Presidential Address, G. Wood.

Oct. 8.—Institute of Fuel (Midland Students' Section): Chairman's Address, H. B. Bassett. The University, Edmund Street, Birmingham, 7.30 p.m.

Oct. 8.—Institute of Fuel (North Eastern Section): 'Pore-Size Analysis of Metallurgical Coke,' Dr. A. Gilchrist and Dr. A. Taylor. King's College, Newcastle-upon-Tyne, 6.30 p.m.

Oct. 9.—Midland Junior Gas Association: Presidential Address, R. B. Watkins.

Oct. 9.—Illuminating Engineering Society: Opening Session and Presidential Address, Royal Institute, Albemarle Street, London, W.1, 5.15 p.m.

Oct. 10.—Scottish Junior Gas Association (Western District): Evening visit to North British Locomotive Company, Glasgow, 7.30 p.m.

Oct. 10.—Institute of Fuel (Yorkshire Section): Chairman's Address, Professor A. L. Roberts. The University, Sheffield, 6.30 p.m.

Oct. 10.—Women's Gas Federation (Worthing Branch): Conference, Town Hall (Assembly Hall), Chapel Road, Worthing, 11.30 a.m.

Oct. 10.—Institution of Heating and Ventilating Engineers: 'The Work of the Fuel Research Station,' Dr. A. Parker, C.B.E., Institution of Mechanical Engineers, Storey's Gate, S.W.1. 6 p.m.

Oct. 11.—North Western Gas Consultative Council: Midland Hotel, Manchester, 2.30 p.m.

Oct. 11.—Institute of Fuel (North Western Section): 'Boilers,' H. E. Partridge. Radiant House, Bold Street, Liverpool, 2.30 p.m.

Oct. 12.—London and Southern Junior Gas Association: 'Horizontal Retort Stoking Machine Operation,' K. L. Clark (Associate Member), W. J. Jenkins & Co., Ltd. North Thames Gas Board Offices, Edgware Road, 6.30 p.m.

Oct. 13.—Wales and Monmouthshire Junior Gas Association (North Wales Section): Chairman's Day, Rhyl; Chairman's Address, J. Woodcock (Colwyn Bay), 2.30 p.m.

Oct. 16.—Institute of Fuel: Melchett Lecture by Professor F. H. Garner. Institution of Mechanical Engineers, Storey's Gate, St. James's Park, 5.30 p.m.

Oct. 16.—Institute of Fuel (Midland Section): Chairman's Address, C. Machon. James Watt Institute, Great Charles Street, Birmingham, 6 p.m.

Oct. 17.—Institution of Gas Engineers (South Western Section): Annual General Meeting, Taunton.

Oct. 17.—National Smoke Abatement Society and Institute of Fuel (North Western Section): Joint Meeting, 'Collection of Dust from Flue Gases,' J. C. Cleeves. Engineers' Club, Manchester, 2 p.m.

Oct. 18.—Institute of Fuel (East Midlands Section): Film Evening. Gas Showrooms, Nottingham, 6.15 p.m.

Oct. 18.—Institute of Fuel (Midland Section) and Institution of Heating and Ventilating Engineers: Joint Meeting. 'The Pimlico District Heating Scheme,' A. E. Margolis. Imperial Hotel, Temple Street, Birmingham, 6.30 p.m.

Inaugural Meeting of

The North of England Section

The first ordinary meeting of the newly-formed North of England Section of the Institution of Gas Engineers, which has superseded the North of England Gas Managers' Association, held in the Seaburn Hotel, Sunderland, on Friday, September 21, was marked by a presentation to Mr. A. S. Middleton, who was for seven years honorary secretary and treasurer of the Association.

IT was appropriate that the presentation of a wristlet watch in appreciation of the considerable work he did for the Association should have been made by Mr. J. R. Bradshaw (Deputy Chairman of the Northern Gas Board), under whom Mr. Middleton began his career with West Hartlepool Gas and Water Company 22 years ago.

Mr. Middleton's career was traced by Mr. Bradshaw, who spoke of the contribution he has made to the industry. After nine years at Hartlepool, Mr. Middleton moved to the Durham Gas Company in 1938 as secretary and manager and remained there until vesting day. He is now assistant secretary of the Northern Gas Board.

In reply, Mr. Middleton said that his period in office was one of the most pleasurable in his life. He had come into contact with many people in the gas industry—and the Association had certainly widened his friendships.

Sound Foundations

Mr. W. O. Kirkwood (Divisional General Manager, Sunderland), who is the first chairman of the new Section, at the outset of the meeting recalled that in his address to the annual meeting he had said: 'I look to the management committee for their co-operation in ensuring that the foundations we lay will be sound and true so that the structure which arises will be a credit to the gas industry in the north. Up to the present your committee have done an excellent job of work, and I have every confidence that the foundation they have laid is strong and of good construction.'

Mr. Kirkwood paid special tribute to the work of the honorary secretary, Mr. Stanley Jones, and went on to announce that on November 16 there would be a joint meeting with the Northern Junior Gas Association in the Middlesbrough area, at which a report of the Institution of Gas Engineers' Sub-Committee on 'Unaccounted-for Gas' would be discussed. The report will be presented at the meeting by a member of the Sub-Committee.

In March, 1952, the spring meeting would take the form of a ladies' day in Sunderland. This innovation if it proves successful might well become an annual event, stated Mr. Kirkwood. It was proposed that while the ladies visited some place of interest in the district, the members would inspect the Hendon works of the Sunderland unit.

Members of the Section joined with Mr. Kirkwood in congratulating Mr. E. Crowther (Chairman of the Northern Gas Board) on his award of the C.B.E. in the King's Birthday Honours List. 'The honour is well deserved and is a reflection of the confidence which the Ministry has in the management of the Northern Gas Board,' stated Mr. Kirkwood. 'Mr. Crowther's outstanding ability as an engineer and administrator commands the admiration and respect of all.'

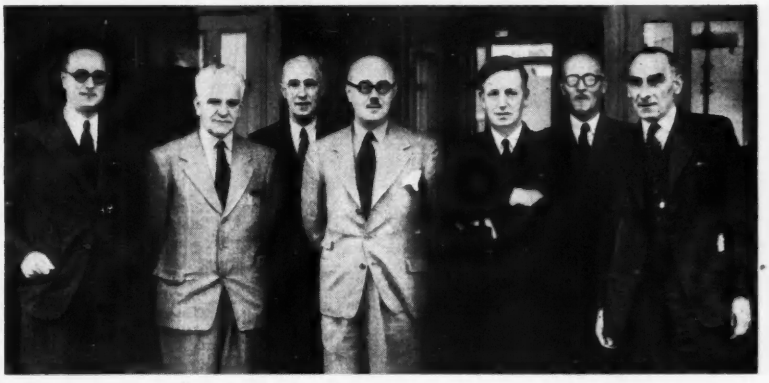
Mr. Crowther, in a short reply, paid tribute to the magnificent co-operation he received from his fellow engineers in the area of the Northern Gas Board.

It was reported by Mr. Jones that membership now stood at 110 compared with 143 in the former North of England Gas Managers' Association in May, 1951. He appealed to all those members of the old Association who had not yet applied for membership to do so without delay.

A statement on the work of the Benevolent Fund was given by Mr. F. Wilson, the Section's representative on the Fund, who said that in 1950, 29 people were receiving assistance from the Fund and the total amount distributed was £1,900. It was a sad feature that only half the members of the Institution contributed to the Fund and he appealed for support for a very worthy cause.

The Section unanimously agreed to the affiliation of the Northern Junior Gas Association, of which Mr. Kirkwood was the founder president.

There was a big ovation for Dr. J. Burns (Chief Engineer of the North Thames Gas Board) after he had presented his Institution paper, 'Some Aspects of Gas Manufacture Practice in the North Thames Gas Board Area.' He was thanked by Mr. G. E. Anderson (Chief Production Engineer, Newcastle Division), who congratulated Dr. Burns on the outstanding technical value of the paper and the superlative way in which it was presented. Mr. Kirkwood said that the glimpse into the future on such matters of technical interest as the application of the gas turbine in connection with waste heat recovery and the utilisation of surplus electricity for the electrolysis of water to hydrogen and oxygen provided a great deal of food for thought for the academic mind.



At the inaugural meeting of the North of England Section. **(Left to right)** *Mr. A. S. Middleton (Assistant Secretary, Northern Gas Board); Mr. G. E. Anderson (Chief Production Engineer, Newcastle Division); Mr. F. P. Fall (Chief Engineer, Sunderland); Mr. W. O. Kirkwood (Divisional General Manager, Sunderland), first Chairman of the new Section; Dr. J. Burns (Chief Engineer, North Thames Gas Board); Mr. S. Jones (Engineer and Manager, Middlesbrough); and Mr. F. Wilson (Divisional General Manager, Darlington).*

Members stood in silence in memory of the late Mr. L. M. Weldon, who served the Auxiliary Section of the former North of England Gas Managers' Association for 16 years as honorary secretary and afterwards was for two years secretary of the Northern Junior Gas Association until failing health compelled him to resign.

Pressure Cooker Manufacturers plan immediately to step up production so that more cookers may be available to the public during the critical time of winter fuel shortages. This follows the broadcast speech on September 22 of the Minister of Fuel and Power, when he announced that the output of pressure cookers would be much increased in the next few months. 'The pressure cooker,' he added, 'makes tremendous savings in electricity and gas.' Also planned for the coming months is intensification of expert advice and instruction to the public on the intelligent and regular use of a pressure cooker so that its potential usefulness in saving fuel may be fully explored.

GAS DISPLAY AT SOUTHPORT FLOWER SHOW

THE Southport Flower Show, which has created new records every year since the first show in 1924, has now become not only a national, but an international, event. The attendance on the first and second days greatly exceeded the total of the first two days in any year. On the third day rain fell continuously, but, despite this, 19,281 people attended on that day. The total attendance was 106,529.

The stand of the North Western Gas Board was the subject of much favourable comment with its imposing Grecian facade supplied from area headquarters at Manchester. Inside the large marquee behind the facade there were many interesting and colourful exhibits. A 'Daisy' heater was fitted in a complete greenhouse and attracted a continuous flow of visitors. Other types of equipment included Potterton and Ideal boilers and a Brockhouse steam boiler.

The centre-piece was a sulphate of ammonia display, and to give the impression of more and more crops being produced with the help of sulphate of ammonia, miniature tractors and wagons loaded with farm produce, were kept moving slowly around a rural background.

Another exhibit of great interest was the display of bottled fruit showing how appetising dishes can be made available in the winter by a little forethought in the summer. A fully fitted kitchen background provided the setting for Miss Mary Williams and her assistant demonstrators to show how this bottling could be done best by gas. Demonstrations were continuous, the three demonstrators working in relays. They were never without a large and interested audience throughout the three days of the show. Many useful enquiries arising from these demonstrations were received by the sales staff. A display that attracted considerable interest featured pest destruction by tar oil washes.

Mr. C. H. Leach (general manager, Liverpool group) assisted by Mr. Frank Fisher (group sales and service officer) and his staff, was responsible for the exhibit.

Among the first to inspect the stand was a group of Nigerian visitors in national costume, and the accompanying picture shows them with Mr. H. J. Risby, the Southport district service manager.

Nottingham Trades Exhibition

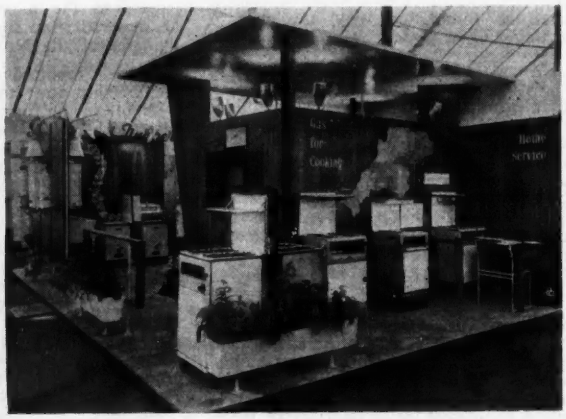
Occupying some 30,000 sq. ft., the Nottingham Trades Exhibition, organised by Nottingham Chamber of Commerce to coincide with the visit to the city of the Festival of Britain travelling exhibition, was declared open on September 20 by Mr. A. G. Bottomley (Secretary for Overseas Trade) in the presence of the Lord Mayor of Nottingham (Ald. G. H. Wigman), Sir Gerald Barry (Director-General, Festival of Britain), Mr. J. G. McMeeking (Chairman of the Trades Exhibition Committee), and many exhibitors. The exhibition, which attracted 250 exhibitors on 100 stands, remained open until September 29.

Exhibits of interest to the gas industry were supplied by the East Midlands Gas Board, who presented a display of the latest domestic appliances, and a selection of industrial appliances with photographs illustrating the many ways in which gas is adapted to serve the needs of industry.

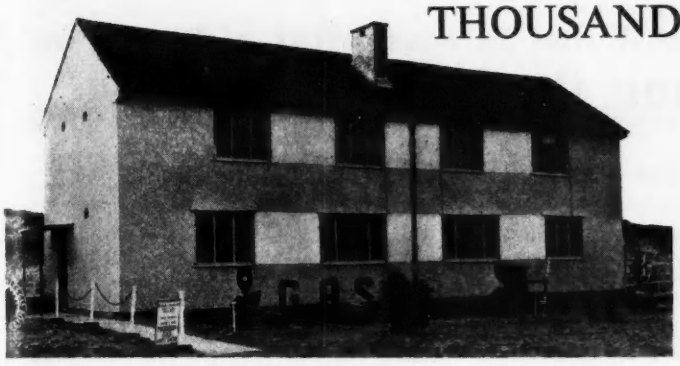
The Stanton Ironworks Company, Ltd., showed aerial views of their works, also a mechanical display demonstrating the flexibility of their screwed-gland joint for cast-iron pipes. Other exhibits were special castings for pipelines, sectioned bolted-gland flexible joints and spun concrete lighting columns.

London and Southern Section.—The first annual general meeting will be held on Tuesday, October 30, at 2.30 p.m. at the Institution of Gas Engineers, 17, Grosvenor Crescent, W.1. Following this meeting a paper entitled 'Training for Management' will be presented by Mr. Norman C. Rimmer (Director of the Training Wing, Roffey Park Institute of Ocupational Health and Social Medicine).

DEVON AND EXETER TRADES FAIR



An interesting feature of the South Western Gas Board's stand at the Devon and Exeter Trades Fair (held from September 15 to 22) was a model of the new Exeter gas manufacturing station, which will have an ultimate capacity of 24 mill. cu.ft. a day—four times the maximum output of the present works. On the left are the Lord Mayor of Exeter (Alderman F. Cottey) and the Sheriff of Exeter (Alderman W. H. C. Bishop) examining the model. The other photograph gives a general view of the stand.



THOUSANDTH HOUSE HAS ALL-GAS KITCHEN

Minister Performs Opening Ceremony at Port Talbot

ON September 15, Dr. Hugh Dalton (Minister of Local Government and Planning) performed the opening ceremony of the thousandth house built in Port Talbot by the local authority since the war.

The kitchen in the thousandth house was all-gas (except lighting)—there being installed a cooker, washing machine, refrigerator, drying cabinet and water heater. There were also radiators in the hall and on the landing, and a gas fire in one of the bedrooms.

The local authority, in addition to granting gas such supremacy in the thousandth house, gave the Wales Gas Board the use of the house next door as an exhibition house. An all-electric exhibition house was installed across the road. Dr. Dalton paid a visit to both exhibition houses and was received by Mr. W. F. Edwards (general manager and secretary of the Port Talbot undertaking).

The record for the thousand houses is as follows:

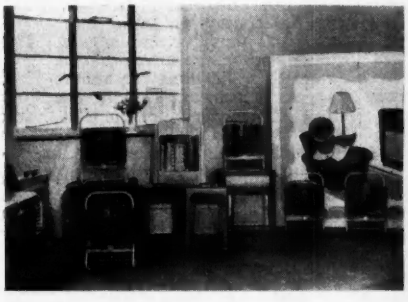
		Average per House.
No. of heating and cooking points ...	4,717	4.7
No. of lighting points	3.879	3.9
Total	8,596	8.6

In certain areas covered by the thousand houses, electricity is not available. The proportion is—electricity supply available in 600 houses; not available, 400 houses.

Appliances installed.

Cookers	985
Washing machines and boilers	445
Gas fires	1,050
Refrigerators	351
Gas rings	20
Water heaters ...	2
Total	2,853

After the visit of the Minister the exhibition setting remained open to the public for a week and, during that time, over 4,000 people visited the site.



Performance of Gas Conversion Plants

PRESIDING at the annual meeting of Petrochemicals, Ltd., in London on September 6, Sir Robert Renwick, Chairman, said that the period since last September had been a time of real progress, and many technical problems had been successfully overcome. All the individual plants were now in operation and on the aromatic side they had achieved their production targets; the gas conversion plants, while all producing materials to required specifications, were not as yet producing at their rated capacity. Overall production was improving, but production at rated capacity of the entire range of end products could not be expected until the close of the year and was dependent on the completion of certain constructional work now in hand and on an adequate supply of chlorine.

Last autumn it had been made clear that until the gas separation plant was effectively in full operation it was impossible to assess the future with any degree of certainty. After careful consideration this plant was shut down in February, 1951, in order to make certain modifications to the refrigeration unit. Since the plant was restarted early in March it had shown a steady improvement and the Board was confident that with further operating experience it would prove capable of achieving its planned throughput in the course of the next few months, although some further small modifications might still be necessary.

The performance of the gas conversion plants had steadily improved. Plant for the production of ethylene oxide was operating smoothly although its output might be limited by a shortage of chlorine deliveries.

The Catarole furnaces, which convert the charging stock into gas and an aromatic liquid, continued to operate satisfactorily. The plants for the separation and purification of the various liquid and solid products contained in the crackylates might now be said to be in regular production. Operational experience had shown that a number of fractions which originally it was thought could only be sold at their fuel-oil value, had specialised outlets and were, therefore, more valuable. Part of the money provided last autumn was destined for modifications, improvements, and additions to these plants. Good progress had been made, but until this work was completed the full conversion of the crackylate into finished saleable products would not be possible and stocks of certain intermediate products would in the meantime continue to rise.

CONSULTATIVE COUNCILS IN SESSION

Levelling the Misery

Coke Supply Position Explained to Eastern Council

ON September 17, at the Connaught Rooms, W.C.2, the Eastern Gas Consultative Council heard Mr. C. A. Deas, Coke Manager to the Eastern Gas Board, explain the background to the present coke crisis and describe the Board's plans for what he termed 'levelling the misery.'

Outlining the basic economics of coke production and sale, **Mr. Deas** said that any increased demand for gas, due to the effect of abnormal weather more often than not resulted in a reduction in coke available for sale, consequent upon the need for using a higher proportion of the coke produced from the coal gas manufacture process for the manufacture of water gas. It followed, therefore, that when the demand for coke was at its peak for the reason given its production might well be falling. It was a practical proposition to estimate reasonably accurately what the likely demands for gas would be for a year or more ahead assuming normal weather conditions, and from this estimate calculate that a certain quantity of coke will be available for sale, and it was on this estimate that forward sales commitments were accepted. Unfortunately, however, it was not possible to predict accurately the effect of weather conditions on coke demand. In general it had been found that the difference between a mild winter and a normal winter, with an average period of severe weather, could cause coke demand to vary by plus or minus 10% when comparing one year with another. This followed because the greater percentage of coke was used for purely seasonal space heating. As an example, last autumn, because of the early onset of inclement weather, coke stocks began to fall just a month earlier than the previous autumn.

Sudden Demand for C.W.G.

A factor also of no little consequence, and with which the Board was confronted last summer, was the necessity to change gasmaking programmes to include a very much higher percentage of water gas at short notice, consequent upon short fall of coal supplies and Ministry direction to conserve coal stocks. Another factor coming more into the picture in recent years was the delay in completion of annual repairs to carbonising plant, due to shortage of labour non-delivery of materials, etc. In preparing programmes of plant operation it was necessary to assume that certain plant would be available at a given time; if this plant was not available, then obviously the gas had to be made up from some other source, usually water gas, with consequent reduction in coke available for sale.

In the coke year ended April 30 last the combined effect of short fall in coal supplies and non-completion of plant repairs to programme, was that the actual coke produced for sale in the Eastern area during that year was some 55,000 tons less than the amount originally estimated which, when compared with the total coke produced for sale, of the order of 600,000 tons, was of no little significance.

Unfortunately, said Mr. Deas, such effects as these were not always spread evenly over the area and might well be of a purely local nature, which meant that they could have an effect on local coke supplies quite out of proportion to their general effect on the position in the area as a whole. To offset these falls in production every endeavour was made to buy coke in from other boards' areas, where there might be a surplus of coke, and during last summer some 33,000 tons were actually bought in over and above the quantity which regularly came in under the normal course of business. As the position deteriorated with the onset of autumn and winter, other boards also became involved in supply difficulties and this, together with transport problems, prevented any further quantities of coke being imported.

Position Before Nationalisation

Before vesting day the gas industry had operated in the form of about 1,000 separate autonomous gas undertakings. The majority of these were naturally concerned with their own wellbeing and not vitally interested in the deeds of their neighbours, except in so far as there were certain national bodies which spoke for the industry as a whole on certain major points of policy. An undertaking was nevertheless more or less free to do what it liked, and so far as coke was concerned, some undertakings were very much alive to the potentialities of their coke as a source of revenue, and did much to improve the quality of their coke and develop its sale. Others did virtually nothing more than sell their coke to whoever came along to purchase it.

Following upon much development work by the larger London companies, who realised the potentialities of orderly marketing of coke and its effect on the revenue account of the undertaking, in 1931 the London and Counties Coke Association was formed and eventually comprised some 250 undertakings in the south of England, which were now in the main represented by the five southern area boards. The main obect of this Association was 'to promote the use of coke and to co-ordinate and regulate its supply within the area, and to provide certain services in regard to technical research, information and publicity.' The co-operation of the various undertakings was on a purely voluntary basis. The Association operated with a Central Committee comprised of a representative from each of a number of county committees on which each undertaking was represented.

It was important to bear in mind that although as already stated some 250 undertakings were members of this Association the fact that there might be a shortage or surplus of coke in, say, Norwich was of no concern to Tottenham. If a member undertaking had a shortage or surplus problem it applied to the Central Committee of the Association for assistance; and efforts were made to bring coke in or dispose of a surplus as appropriate, by approaching other undertakings in the country. It was not without significance that something of the order of 33⅓% of the industry's revenue came from coke, which was an indication of its importance in the Board's activities.

Coke Production at Vesting Day

The amount of coke at vesting day produced within the area of the London and Counties Coke Association was of the order of 4.5 mill. tons per annum, divided as follows:—

Services, railways, exports, I.C.I. and blast furnaces	15%
Industrial consumers, taking more than 100 tons per annum ...	20%
Non-industrial consumers taking more than 100 tons per annum	25%
All types of consumers taking less than 100 tons per annum ...	40%

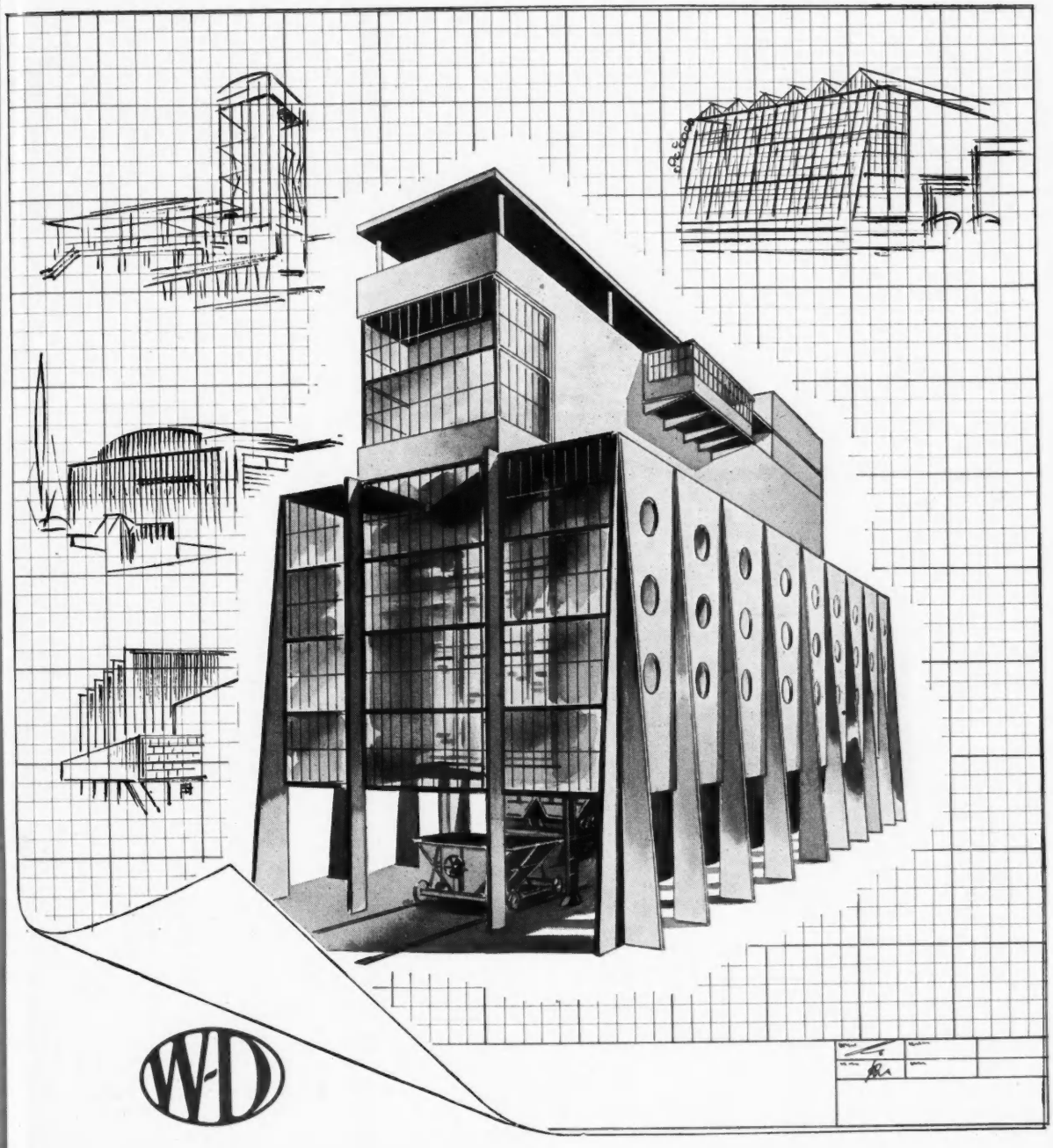
It was estimated that probably half this last figure—*i.e.*, 20%—went to the domestic consumer proper.

In the early part of the war it became necessary to move coke because of increased demands in certain districts to which, for commercial reasons, coke did not flow in sufficient quantities. Accordingly with Government assistance a fund was started which had as its object the financing of these commercially unsound but necessary movements. The fund was financed by a levy on each ton of coke produced within the Association's area.

In effect the fund ensured that the supplying works received the price at works which it would have received had the coke been sold locally, and the consumer's requirements were met at the same price as if he had received the coke from his local works. This fund was still in operation today but was under complete examination with a view to the manner and extent of its operation being changed to bring it into line with the present-day 'set-up' of the industry and facilitate inter-Board movements of coke over the whole country.

Other matters looked after by the Association were advertising and propaganda, contact with consumers, statistics, relation with other industries, technical service, etc.; in fact the Association acted as a central marketing organisation for the bulk of the undertakings in the south of England.

The possible influence of the South Bank Exhibition upon future Retort House Design !



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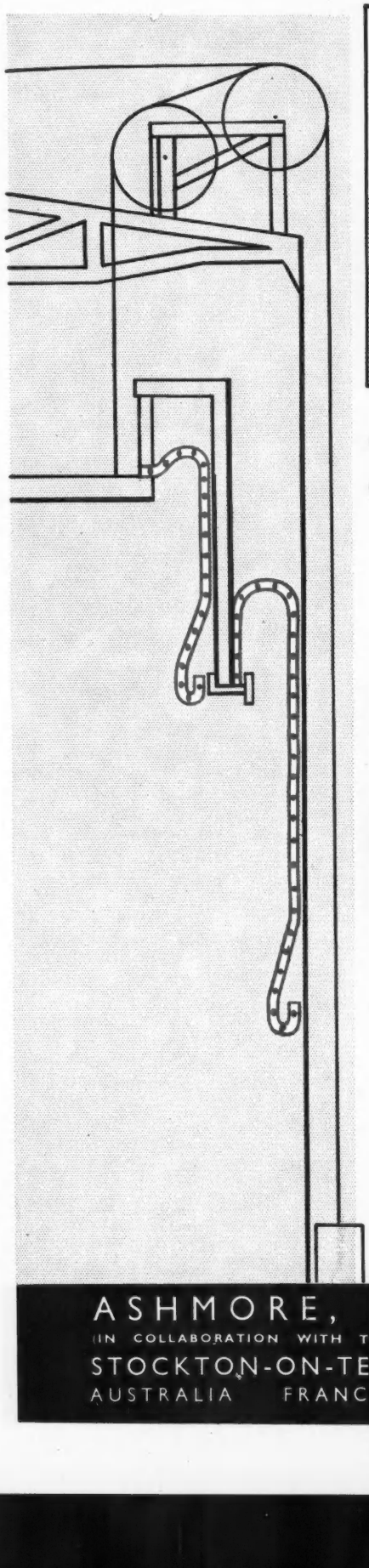

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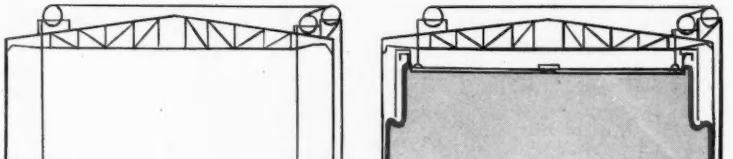

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STOCKTON-ON-TEES AND LONDON

AUSTRALIA FRANCE CANADA INDIA SOUTH AFRICA

In 1944 the Ministry of Fuel and Power decided that coke supplies must be programmed, as had been done with coal since the beginning of the war, and this work also was carried out by the Association. The effect of this was that every consumer taking more than 100 tons of solid fuel per year had, in addition to his programmed allocation for any quantity of coal which might be contained in this 100 tons, a programmed allocation for such coke as he required. The programme indicated to him the merchant or gas undertaking who would be supplying his coke. The gas undertaking or merchant, as the case might be, was in turn given an allocation to cover all the consumer allocations he would be expected to meet; in addition a certain tonnage of coke was allocated to him to cover his customers taking less than 100 tons per annum.

To give ministerial authority to this work a member of the Association was given Ministry status; since vesting day however, this ministerial status had passed to the individual boards, in as much as an officer of each board, usually the coke manager, was appointed District Coke Representative of the Ministry of Fuel and Power for his board's area. This change was not without significance since while giving the board's coke manager certain ministerial responsibilities, at the same time it placed obligations upon the boards to the Ministry for the control and distribution of the coke which was produced for sale within the area.

Technical Problems

Some problems existing on the technical side were in particular that out of some 90 works in the area 48 had no screening plant at all, 12 had inadequate plants, and of the remaining 30 not more than 24 had modern fully equipped plants. The significant point was, however, that those works equipped with the modern plants handled some 80% of the coke produced for sale. In other words approximately 120,000 tons of coke was produced annually in 66 small units scattered over the area. The effect of this was that the coke produced from these smaller works was sold more or less as 'made,' which limited the purposes for which it could be used. The final result was that whenever the local consumer or merchant could obtain correctly sized coke from another works, he did so, and thus these smaller works quickly found themselves embarrassed with stocking problems whenever the supply position became at all easy.

A further problem of importance was that of stocking capacity at the various works in the Board's area, and its related problem of efficient means of stocking and reclaiming as and when required—at a sufficient rate to meet demand.

Very few works in the area—and this problem is not confined to the Eastern area—had seriously tackled this problem, which in the past had usually been avoided in view of the capital expense involved. Moreover, coke was not then quite the important factor in the national fuel position that it was today, when consequent upon the shortage of coal it was being looked upon as a major fuel rather than a second best fuel, as was often its position in the past.

Local surpluses and shortages of coke were not peculiar to a nationalised industry, and it had been said, not without justification, that there was always either too much or too little coke. This problem really resolved itself into a question of coke stocks, always assuming adequate supplies of gasmaking coals were available.

In the past it had always been usual for a works to clear its stockyard by the spring, and if it was not cleared then special efforts were made to dispose of the coke still in the works yard at that time. The result was that no real reserve over and above the quantity needed to cover working requirements had been available to meet the extra demand which usually occurred every third or fourth winter, or to cover any reasonable loss of estimated production which might occur.

Adequate Stocking Ground

No little expense was involved in providing adequate stocking ground, together with the necessary equipment, in order that in a mild winter coke could be put to reserve stock instead of being disposed of to any prospective buyer, but the problem would have to be faced up to if continuity of service was to be provided at all times. The experience of a large undertaking now vested in an adjacent board had shown that this policy paid a handsome dividend, in that over a period of 3-4 years, by adequate stocking capacity, production could be more nearly made to match demand.

With vesting day, the gas boards were charged under the Gas Act 'to develop and maintain the efficient, co-ordinated and economical production of coke, other than metallurgical coke,' and the London and Counties Coke Association as such consequently disappeared, since the 250 undertakings which it co-ordinated became five area boards, each responsible for its own coke organisation.

A National Coke Committee had been set up, comprised of the chairman or deputy chairman of each of the area boards, together with their respective advisers. This Committee co-ordinated at national level the activities of the individual boards, so that these should be related to the national aspect of coke and its problems—*e.g.*, this Committee was now discussing the formation of a National Levy Fund to facilitate inter-board movements of coke to meet the present extremely difficult supply position.

Within this Committee had been formed a London and Counties Coke Division Management Committee comprised of the same members of the five southern boards as sat on the National Committee. This London and Counties Coke Division organisation had as an interim measure taken over the work previously carried out by the Management Committee of the London and Counties Coke Association pending some decision as to the desirability of regional committees within the framework of the National Committee.

To cover the technical work previously undertaken by the London and Counties Coke Association there had been formed a Gas Council Coke Technical Committee, on which each Board had a seat to which it sent a technical representative. This Committee dealt with problems involved in the production, preparation, and utilisation of coke from the technical viewpoint. So far as the individual Boards were concerned each was perfectly free to set up its own form of internal organisation for dealing with the many problems, both technical and commercial, which were connected with coke.

Referring to the problems peculiar to the Eastern Gas Board, Mr. Deas said that the Eastern counties had never been self-supporting in coke production, large quantities of coke—both gas and hard—regularly flowing into the area from the London and Midland gasworks, often in the past to the embarrassment of the local undertakings who had seen coke coming into their town while their own coke had remained unsold.

It had been estimated that to meet consumer needs some 150,000 tons of gas coke should come into the area each year. The larger quantity of this coke was received direct from the supplying works by merchants, who distributed it to the consumer, but some quantity was bought in as and when necessary by individual works, to meet the demands of local markets which had developed but could not always be met owing to short fall in local production, sometimes consequent upon the need of taking up increased gas demand by the installation of additional C.W.G. plant.

Board's Moral Responsibility

As previously stated, pre-vesting individual undertakings were not very much concerned about the difficulties of works perhaps 50-100 miles away, but the position was very different today, since the Board had at least a moral responsibility to all gas coke consumers in its area, whether they used coke produced in one or other of the Board's own works, or coke sent in from another board's area.

The Board's own production was of the order of 600,000 tons per annum. It was known that existing consumers within the area required some 750,000 tons of gas coke per annum, apart from hard coke, so that in effect the Board's responsibilities were some 150,000 tons greater than its production. The major portion of this latter quantity of coke was normally brought into the area by merchants to destinations of which the Board had no detailed information. Whether it was flowing more freely to some destinations than others, or whether to destinations already amply covered by local production, the Board was equally unaware.

The Ministry had directed that every effort should be made to move coke in order to level out inequalities in the supply position, and last winter in so far as the Board's own coke was concerned movements were made to such effect that on the year's working the percentage of supplies made available against allocations did not vary more than 5% between the five divisions in the area. It did not follow, however, that this resulted in each consumer receiving a truly equitable share of available supplies, since the amount of coke

movements which would have to be made were not practical apart from consideration of cost.

The responsibility placed upon the Board to equalise available supplies naturally cost money. In addition, parts of the area, where because of adequate plant capacity there was sufficient local coke to meet the needs of local consumers, must be prepared to release a proportion of their coke to assist those parts of the area where, because of inadequate plant capacity and the need to make an increasing proportion of C.W.G. to meet increased gas demand, insufficient coke was available to meet business which had developed locally. Normally this would be met by bringing in coke, but in times of general shortage such as at present the position could only be met by evening out available supplies within the area at the Board's expense. As an indication of cost, to move coke from, say, Tottenham to Cambridge, cost 22s. 6d. per ton.

A problem which arose as a result of the large number of districts supplied by works with inadequate screening plant or none at all was the need to keep consumers supplied with the correct size and quality of coke for their appliances. This resulted in coke having to be brought into a district to meet a consumer demand which could not be met by local coke because of unsuitability.

Problems of Supply

The Board was very much alive to the many problems of supply with which it was confronted, and these were much aggravated by the fact that such a large proportion of the coke requirements in the area were dependent on supplies over which it had no control. Efforts were being made to obtain some measure of control over this incoming coke, in particular information as to its destinations in the area and the quantities involved.

The Board appreciated the need for coke screening plant on works not already equipped, and provision of coke stocking ground, but in view of the many schemes of integration contemplated, with consequent closing down of works, the remedy was not straightforward and would require much thought and careful planning on a broad area basis. In addition there was an economic limit to the amount of capital which could be sunk in storage grounds and handling equipment, to meet a condition which might only occur at infrequent intervals.

The root cause of coke supply difficulties was shortage of coal. Given adequate supplies of coal for *all* purposes, they would be quickly confronted with the need for developing their coke sales organisation, and ensuring that all their coke was correctly screened and graded.

Mr. Deas concluded by making frank reference to the prospects for the coming winter. They were, he said, very far from being satisfactory. Coke stocks in the Board's area at 15,000 tons were less than one winter week's demand. At the same time last year stocks had amounted to 50,000 tons, which even then were considered short of the tonnage required to meet winter demand. What was being done to remedy matters? Naturally every effort had been made to buy coke in from other boards' areas, but when it was appreciated that national stocks today stood at 250,000 tons, less than one week's winter demand, compared with 1,100,000 tons at the corresponding time last year, it would be understood why it had not been possible to buy coke in.

So far as the maximum permitted quantity of 30 cwt. per registered consumer, mentioned in the Ministry order re-imposing control of supplies to controlled premises, was concerned, he feared that much less than this quantity was likely to be available, unless some reduction was made in supplies to priority consumers now being supplied according to their requirements; but this was a decision which could only be made by the Ministry.

Mr. Deas was warmly thanked by the Council for his informative address which, in the words of one member, was 'something of a revelation.'

LENGTHY AGENDA

Under the Chairmanship of Alderman R. TURNER, J.P., the Council dealt with an unusually lengthy agenda.

The question of the price of gas at Saxmundham, as compared with Leiston and Aldeburgh, was again considered after having been referred to the Eastern Gas Board. The comments of the Board were received and the Council agreed that the Board had dealt fairly with its consumers at Saxmundham as the price had only increased by 5d. per thousand cu.ft. since vesting date. This, it was felt, was a small increase when the additional costs of coal and wages since vesting date were considered.

A comparative statement of the cost of production at the Bury St. Edmunds works of the Eastern Gas Board, before and after vesting date, was received, which showed that the increased costs since vesting date included provision for depreciation and that no fund to provide for this had been made prior to this date. This statement was called for by the Council at their last meeting, as the Borough of Bury St. Edmunds and the Bury St. Edmunds Chamber of Commerce had considered it unfair that the price of gas should be raised by 3d. per therm in which they alleged that 2d. was due to increased overheads and 1d. for the sake of uniformity. From the statement it was seen that the final deficit for the first 11 months trading came to 1.80d. per therm, plus 1.27d. per therm to cover increases in the cost of coal, gas oil and wages for the first few months of 1951, and the Council felt that it did support the action of the Board in increasing the price of gas in Bury St. Edmunds by 3d. per therm. It was agreed that the statement be sent to the Ipswich Divisional Committee for their information.

The Board's report on the complaint of poor pressure in certain parts of Letchworth was received and it was seen from pressure records which had been taken, that excellent pressure conditions prevailed in the areas complained of, and therefore the complaints would appear to be due to defects in consumers' services. If, therefore, consumers were suffering from insufficient pressure in these areas, they should be reported to the local gas showrooms.

The Minister's comments on the Consultative Council's suggestion that there should be set up an equalisation fund for interest on capital and a uniform price of coal for the gas industry was received. The Minister stated that under present circumstances he could not consider taking action in that direction, pointing out that the cost of coal at any point was largely influenced by the cost of transport from the coalfields, and that if any equalisation were contemplated this could only be at the expense of those consumers located near the coalfields who would have to bear in the price of coal the cost of transport to other users in other parts of the country.

Arealised or Rationalised

One speaker felt that the present system was contrary to the spirit of nationalisation—indeed, the industry had not been nationalised but 'arealised.' Another member, equally addicted to the invention of phrases, claimed that the industry had only been rationalised!

With regard to the equalisation fund for interest charges, the Minister pointed out that this would be contrary to the concept of the Gas Act, 1948, whereby the area boards were autonomous units which were responsible for making their own ends meet. The Council were not satisfied and called for a complete report on the cost of coal throughout the country to enable them to calculate what would be the effect on the price of gas in the Eastern area if a uniform price of coal were introduced and, conversely, what would be the effect on those places situated near the coalfields. Regarding the capital costs, the Council again pointed out that in the Eastern area there were no less than five new towns where new gasworks or extensions to provide a supply of gas to these new towns had to be provided and upon which no return on the capital employed could be expected for the first few years. The Council felt this was a hardship on the gas consumers in the Eastern area whose capital costs were already higher than the average for the country as a whole.

It was reported that the Minister had appointed Mr. C. H. Frewer, of Messrs. Boulton and Paul, Ltd., of Norwich, a member of the Consultative Council for the area of the Eastern Gas Board under Section 9(2) (b) of the Gas Act, 1948, for a period of three years with effect from July 23, 1951. Mr. Frewer is the nominee of the Federation of British Industries whom he will represent on the Council. During the course of the meeting Mr. Frewer made a number of valuable comments based on his experience as a works manager.

Correspondence was received from the Cooper Roller Bearing Co., Ltd., regarding the price of gas at King's Lynn, and the Chairman reported that he had written to explain the reasons for the increases which had taken place since vesting date.

A consumer of East Barnet had written regarding the charge for main-

tenance of water heaters as compared with another Board and the Council were of the opinion that the charge of the Eastern Gas Board was fair. Their charge of 13s. per annum included a general overhaul of the appliance, including cleaning and adjustment of burner equipment and automatic controls, inspection and cleaning of ventilation equipment, and inspection of waterways and descaling where necessary, two routine service calls per annum being made.

Letters were received from industrial consumers regarding aggregation of consumptions, and the Council agreed with the published policy of the Board that aggregation could not be permitted. The Board had, however, written to say that aggregation may be permitted where the premises of a consumer are contiguous or are situated in the very near vicinity of one another and are controlled under single supervision. The Council realised the great danger of going beyond this point when once the rule was broken, and a lengthy and largely fruitless discussion ensued regarding the correct definition of 'very near vicinity.'

Price at Great Yarmouth

A letter received from the V. G. Manufacturing Co., of Great Yarmouth, complained of the high price of gas. The Company were planning to build an extension of their works in Great Yarmouth in accordance with the Government recommendation that where possible industry should move from London to an area with a surplus labour force. At their works at Stoke-on-Trent they had obtained a very cheap quotation for gas and at their London works the price was nearly 50% higher. They now found that the price of gas in Great Yarmouth was nearly double the price at Stoke-on-Trent and as their process required gas throughout the 24 hours of the day, they were alarmed at the prospect. The matter was referred to the Eastern Gas Board who had stated with regret that in their opinion there were no special circumstances which would render the terms of Tariff No. 5 (The All-Purposes Non-Domestic Block Rate) inapplicable. After much discussion the Council were forced to agree with the Board's decision, but considerable sympathy was expressed for the company's position, although it was felt that they should have ascertained such facts before moving.

Arising out of the minutes of the Watford Divisional Committee, a report was received that the Board had decided to abolish the penny in the slot gas meter, but had decided that it should be still available to those people whose means were such that a shilling was not always available to them. This would apply particularly to old people and those in receipt of the old age pension. The Committee realised that some hardships might result if this rule were too rigidly adhered to and they had asked the Board to deal with applications in a sympathetic manner.

The Council approved the appointment of Councillor H. Morris, of Hemel Hempstead, to the Watford Divisional Committee.

Vote of 'No Confidence' in South Western Council

A MEETING of the South Western Gas Consultative Council was held at Taunton on September 19, the Chairman being Councillor A. W. Loveys, C.C. The Council considered giving publicity to their Annual Report for 1950-51 which was due to be published as part of the Gas Board's report later in the year. Councillor Loveys said it might be possible to get the Council's report printed separately and concurrently and, if so, suggested that copies might be made available to members of local committees and, through gas showrooms, to interested members of the public. The Gas Board's co-operation had been promised. The Council left it to the Chairman and Secretary to make the arrangements.

Note was taken of the Board's intention to alter for the purpose of general unification the calorific value of the gas sent out from the Wellington, Martock, Bristol, Bath, Devizes and Trowbridge Units and to supply in future gas of a declared value from the Langport, Somerton, Colyton, Ottery St. Mary, North Tawton, Uffculme, Torpoint, Callington, Gunnislake, Malmesbury, Berkeley, Bidford-on-Avon, Chipping Campden and Wotton-under-Edge.

The Board had informed the Council that protests had been received in connection with increases in the price of gas from the St. Ives Borough Council and the Urban District Councils of Melksham and Clevedon. The protests were noted.

At the previous meeting the Council had discussed a complaint by the Penzance Borough Council alleging extravagance in the decoration of the local gas showroom. The Council had then agreed with the Board's policy of making showrooms attractive and with the way it had been applied to the Penzance premises. This had led since to a resolution of no confidence in the Council being passed by a majority vote (according to a Press report 10 to 7) on the Penzance Borough Council. When considering this resolution the Consultative Council also had before it a letter on behalf of another Penzance body assuring it that the resolution in no way represented the true opinion of the people of that area and trusting that it would 'be treated with the contempt it deserves.'

The Chairman reported the correspondence he had had with the Penzance Borough Council questioning the information given by Alderman T. T. Lane, a former member of the Consultative Council, to that Borough Council and which had been relied on to support their resolution.

Alderman Lane's recollections of Consultative Council matters and in particular those concerning the activities of the Chairman, Councillor Loveys, were strongly disputed by two members of the Council from Cornwall.

The Council by 12 votes to two decided to take no further action in the matter. During the discussion it was stated that the Ministry of Fuel and Power had been informed by the Penzance Borough Council of the resolution of no confidence but had declined to take any action.

The Chairman reported correspondence he had had with the Newton Abbot Urban District Council regarding gas tariffs. Criticism was directed against the publicity provided by the South Western Gas Board and especially in connection with the need to increase gas prices. It was felt that the Board had a very good case but in view of the protests that had been made against price increases by local authorities it was evident, despite the information provided by the Board, that the reasons were not appreciated.

Simplified Publicity

Mr. L. G. Northcroft, O.B.E. (Cheltenham), said that the publicity provided by the Gas Board, including that associated with price increases, was not put in sufficiently simple terms. He thought there ought to be on the Board's staff someone capable of explaining to the public in terms the public could understand the Board's policy and achievements. He thought it was obvious that this was not being done despite the fact that the Board had two publicity officers.

Councillor Loveys said he knew the Chairman of the Gas Board tried to obtain as much publicity as was possible for the reasons for the Board's actions and he undertook to convey to the Board the observations that had been made, including the suggestion that the publicity should be that which an ordinary trading concern would regard as appropriate.

The Kingswood Urban District Council had protested to the Board against recent price increases and had asked about future possibilities regarding a uniform tariff throughout the country. It was felt that the Board's reply might with advantage have been worded differently and have provided a more satisfactory answer. It was pointed out that Kingswood was fortunately placed in relation to the new tariff and that it might not enjoy any advantage from a national tariff even if the existing obstacles to such a possibility could be overcome.

There was considerable correspondence from the Brixham Urban District Council regarding the position of that locality on the gas tariff, especially in relation to Paignton and Totnes. Councillor Underhill said that the Torquay local committee had gone into the complaint and he pointed out that the last tariff increased the price at Brixham by 2d. whereas Torquay was raised 3d. The price at Brixham was now 1d. more than at Torquay whereas previously it had been 2d. per therm. Regarding the point made by the Brixham Urban District Council that that district was connected by a main with Torquay, Councillor

Loveys pointed out that the connecting main was a short 10 in. one from the outskirts of the Torquay supply and at present could be used only to supplement the Brixham supply by about 5% if and when the output from the Brixham undertaking was insufficient to meet peak demands. The Brixham undertaking was still supplying its own locality and the cost of making gas there was higher than at Torquay.

The view of the Torquay local committee was that no case existed for an alteration of the present gas prices at Brixham and this view was endorsed by the Consultative Council.

The Bristol Branch of the Tobacco Workers' Union had protested to the Consultative Council about the difference in the price of gas at Bristol from those at Newcastle. The Secretary had replied that under the Gas Act each area board had to pay its way and the main cause of price differences lay in the cost of coal transport and the fact that in the Newcastle district gas which otherwise would be largely wasted was available as a by-product from the coke oven industry which did not exist in the south west. The Council approved the reply.

A protest by the Bristol Borough Labour Party against increased gas prices and charges for meter rentals and asking for a review of the Gas Board administration had been referred by the Ministry of Fuel and Power to the Consultative Council. The Chairman of the Council reported the correspondence he had had with the Bristol Borough Labour Party and said that the Bristol local committee deplored that criticism had been made without some attempt being made previously to ascertain the facts or to obtain information as to the figures involved which included a reduction in meter rentals for a considerable proportion of gas users in the Bristol area.

The estimated cost of the proposed new Gas Board premises at Plymouth was objected to by a Teignmouth gas consumer who deemed £250,000 extravagant especially at a time when the price of gas was raised. In his reply to the consumer the Chairman of the Gas Board explained that the offices of the two local undertakings had been destroyed during the war and no central premises now existed. These were essential for economical administration by the Board particularly as some of the work of a very large area was or would be located at Plymouth. Part of the cost would come from the War Damage Commission. The present lack of sales facilities had been demonstrated by the sales results for the sub-division, roughly one half the attainment of other sub-divisions.

After some discussion the Council decided to ask the Gas Board for further information, including relevant figures, and adjourned further consideration until the next meeting.

Stockton Division Progress

AN outline of progress on schemes now being carried out in the Stockton division of the Northern Gas Board was given to Stockton Division Consumers' Committee on September 10 by Mr. F. L. Scaife, Divisional General Manager. Alderman P. M. Williams (West Hartlepool) presided.

Mr. Scaife reported that in the Stockton unit the erection of the 4 mill. cu.ft. per day new vertical retort plant was proceeding and it was hoped to begin gas making on the first 2 mill. section in the latter part of 1952 or early 1953. Shortage of steel had delayed the progress of the work.

So far as coke oven gas supply was concerned, the foundations of the main sections of the Fishburn plant were complete and building operations were now scheduled to follow, although the steel shortage might cause delay.

A contract had been placed for the erection of four steel purifiers of 2½ mill. cu.ft. capacity per 24 hours for completion in the autumn of 1953. These boxes, said Mr. Scaife, would assist in the purification of the increased quantity of gas which would come from the vertical retorts. The foundations of a 3 mill. cu.ft. holder in the Stockton unit were completed during August and erection of the tank should now proceed satisfactorily. The high pressure holder was now completed at Haverton Hill and successfully put into operation in June. These two storage vessels would not only assist in meeting divisional storage problems but ensure the continuance of the ample peak load pressures which had been enjoyed by their consumers throughout the wide area served by the division.

In the case of Hartlepool unit, it was proposed to maintain retort benches at No. 1 works in such order as to permit their use as standby plant. At No. 2 works the 2 mill. cu.ft. per day carburetted water gas plant was to be put into operation in the early autumn and would prove a valuable acquisition to production plant as well as assisting to maintain adequate and continuous gas supplies within the division. Comprehensive additions to ancillary plant to be made during the year included installation of Lancashire boilers in duplicate, electric detarrer, exhausters in duplicate, Connersville meter, purifier modifications, provision of electricity supply, new railway sidings, and new garages.

On distribution in the Stockton unit, Mr. Scaife said that the laying of the 24 in. main from Stockton works to the existing 18 in. main at Victoria Bridge, Thornaby, was finished in June and full interconnection between Stockton and Middlesbrough holders was anticipated towards the end of the year. Of the interlink with Hartlepool Mr. Scaife said that mainlaying operations were fully planned and awaited delivery of cast iron pipes. It was hoped the scheduled completion date of this scheme would be realised at the end of this year or early 1952.

A gas supply was turned on at the new town of Peterlee on July 16 and was proving to be one of the most popular amenities in the township. Supplies were being eagerly sought in the communities adjacent to the route of the mains. The limiting factor in this and practically all large mainlaying projects was the shortage of cast iron pipes.

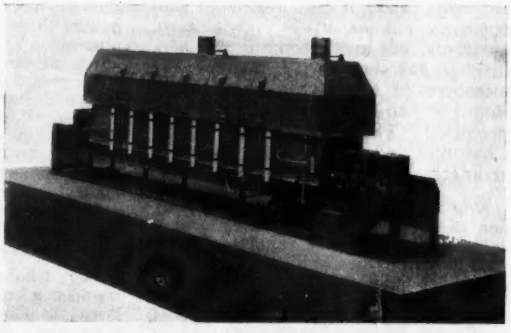
The immediate problem was more likely to be concerned with the shortage of raw materials than plant in which to convert them to gas or mains sufficient to deliver the gas to consumers, said Mr. Scaife. The gas industry was limited as to the amount of coal that could be made available to it.

They were working hard to develop a process of substituting heavier oil for gas oil in their water gas plants, thus tapping supplies at present more freely available than those of gas oil, but the process was in its early stages as yet, and he could not be sure of rapid success.

Mr. Scaife added: 'The large volume of new work entailed in both manufacturing and distribution departments gives evidence of the intention of the Board to afford the public a completely adequate gas service. No effort will be spared to overcome with the minimum of delay any difficulties which might hinder the fulfilment of this aim.'

De La Rue Infra-Red Tunnel

A working model of a gas-fired infra-red tunnel for the high-speed drying of labels on filled biscuit tins was shown at the recent Carlisle Industrial Exhibition. Built to a scale of one inch to one foot and perfect in every detail, even to biscuit tins carried on an electrically - driven conveyor belt, the model was an exact replica of a tunnel made and installed by Thomas De La Rue & Co., Ltd., for Messrs. Carr & Co., Ltd. Similar installations have been made for other leading biscuit manufacturers, to whom the risk of damage to damp, freshly-applied labels has always been a time-wasting drawback. Infra-red tunnels eliminate hours of air drying which causes a hold-up to continuous production. Filled and labelled tins may be dried by infra-red in from three quarters of a minute to three minutes, depending on the type and quality of labels and adhesive. The moment they emerge from the tunnel they are ready for despatch. Equipment can be designed to dry between 500 and 2,000 tins per hour.



Eastern Juniors' 'Presidential Meeting'

Presentations to Past Presidents

THE Eastern Junior Gas Association opened its 1951-52 session with a very successful 'Presidential Meeting' at Cambridge on September 29, by invitation of the Eastern Gas Board and the Association's principal founder and only Honorary Member, Mr. J. Hunter Rioch, General Manager of the Cambridge Division. The meeting was presided over by the President, Mr. E. H. Winch, M.INST.GAS E., A.M.I.CHEM.E., M.I.I.A., Engineer and Manager of the Cambridge Group.

The **President,** in opening the meeting, welcomed Mr. T. C. Battersby (General Manager of the Watford Division and Chairman of the Eastern Section of the Institution of Gas Engineers), Mr. Hunter Rioch, Mr. F. A. Rhead (Peterborough, Senior Vice-Chairman of the Eastern Section), Mr. A. R. Turner, and Mr. G. H. Stanley (Divisional Secretary, Cambridge Division). He also announced regrets for absence from Sir John Stephenson (Chairman, Eastern Gas Board), and Mr. J. H. Dyde (Deputy Chairman, Eastern Gas Board, and President of the Institution). Mr. Dyde hoped to be able to attend at any rate one meeting under Mr. Winch's presidency.

Approval was given to the election of 11 new members and the meeting accepted with regret the resignations of four members who had left the area.

The annual accounts and auditors' report for the year 1950-51 were unanimously adopted.

Mr. J. Hunter Rioch, commenting on the Association's donation to the Benevolent Fund of the Institution of Gas Engineers, invited members to consider increasing their support for that very deserving cause. The President promised that due consideration would be given to the appeal when the next annual donation was considered.

Presentations

The **President** said that at the annual meeting at King's Lynn in June a new idea was instituted in that they presented an illuminated address to the outgoing President, Mr. G. Davies, as a memento of his year of office. The Council had decided that as soon as possible similar presentations should be made to former Past Presidents. There were three apart from Mr. Davies, two of whom were present that day; the other had gone abroad. He had no doubt that if Mr. Patching returned to this country the Association would desire to make a presentation to him.

He had pleasure in presenting illuminated addresses to Mr. J. S. Marshall, who was President in 1947-48 and also filled the office during the latter part of Mr. Patching's Presidential year; and also to Mr. J. T. Brookes, in respect of his Presidential year 1949-50.

The recipients briefly replied.

Mr. Winch then delivered his Presidential Address (see p. 46).

Mr. J. S. Marshall, in moving a vote of thanks, said few had worked harder than Mr. Winch to establish the Association and bring it to its present healthy state. They were glad to welcome Mr. Hunter Rioch, father of the Association, without whose support and guidance in the early days it would not have been so flourishing as it was today. Mr. Winch was doing a great deal to further the interests of the Juniors, not only from the Association angle, but for the good of the industry as a whole, particularly on the educational side, in which he had been interested for many years. It was more necessary than ever today that the team spirit should be established and maintained.

He had done well to stress the importance of fuel economy which, unfortunately, was not yet practised so universally as it should be. His remarks should be taken as a warning, and every effort should be made to save fuel for the national benefit. Economies could be made, and it was up to members of the Association to play their part in the national campaign. Fuel was more valuable than ever, and they could assist in advising consumers on its most economical use. He congratulated Mr. Winch on an excellent and inspiring address which was typical of its author.

Mr. F. G. Cox (Norwich), in seconding, said there was one sentence above all in the address which would give them all food for thought—namely, 'The close co-operation of the sales departments with production and distribution staffs has never been more necessary.' Integration schemes, especially in areas like their own, were very much to the fore, and it was only by manufacturing and distribution personnel working together as a team in the greatest harmony that the best results could be achieved.

The President had shown how economies could be effected on the works. Those efforts would be in vain unless the sales and distribution personnel made every effort to ensure the best and most economical use was made of gas and coke by their consumers. An out-of-date inefficient appliance would use more gas—for a time—but unless prompt action was taken the consumer would soon discover that he could not afford such extravagant running costs and would therefore decide to use some other fuel.

There still existed many ways by which economy in fuel consumption could be increased, and they must bear in mind that a consumer with an efficient installation was a good consumer—that he was satisfied, and would recommend gas as a fuel to his friends. It was futile for laboratory technicians and works engineers to strive after another 1% or 2% efficiency if their efforts were to be negatived by inefficient use of appliances on the district.

After the meeting the members and their ladies (who, during the morning, had taken coffee with the wife of the President) were the guests of the Eastern Gas Board at luncheon.

Mr. J. Hunter Rioch proposed the toast of the guests, among whom he mentioned Mr. T. C. Battersby, Mr. K. B. Meggitt (Bedford), Mr. F. A. Rhead (Peterborough), Mr. G. H. Stanley (Divisional Secretary, Cambridge), and Mr. R. H. Epps (Secretary, Eastern Gas Board) with whose name he coupled the toast. He added his congratulations to Mr. Winch on an excellent Presidential Address.

Mr. Epps, responding, said that as a layman who knew the gas industry only from the point of view of a secretary, he felt Mr. Winch's address had been most provocative, and he was sure it would do a lot of good.

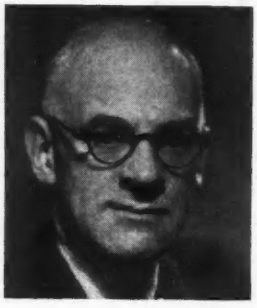
Perennial Difficulties

Mr. T. C. Battersby proposed the toast of the Association, of which, he said, the Eastern Section of the Institution was very proud. He wished someone would discover a better title for the Association, whose members were specialists dealing with subjects in a more advanced way than many managers were capable of understanding. Congratulating Mr. Winch on his Presidential Address, he said he knew what it meant to prepare such an address, having recently presented one to the London and Southern Section and now having to fortify himself for preparing one for the Eastern Section.

Reference had been made to the difficult times through which the industry was passing, but they had in fact always been going through difficult times. The transactions of the Institution showed that in 1920 there were grim forebodings—a threat of another 1d. on coal, ½d. on wages, difficulties in disposing of tar, and the threat of electrical competition.

The President briefly responded and expressed thanks for the support which had come to the Association indirectly and directly since its formation five years ago. He also expressed special appreciation of the fact that the Board's hospitality on that occasion had been extended to the ladies.

The afternoon was devoted to a choice of visits to the Fitzwilliam Museum, the University Botanic Gardens, and a conducted tour of the Colleges, all the parties reassembling in the hall of Trinity College for tea, after which Mr. A. D. Duxbury (Peterborough) on behalf of the members, presented Mrs. Winch with a bouquet in token of their appreciation of all she had done to make the day so enjoyable.



THE JUNIOR'S OPPORTUNITY

By E. H. WINCH, M.Inst.Gas E., A.M.I.Chem.E., M.I.I.A.

Presidential Address to the Eastern Junior Gas Association, Cambridge September 29, 1951.

THE Eastern Junior Gas Association now enters the fifth year of its existence and it is opportune to consider the service it can render to its members and to the gas industry in the areas from which its membership is drawn. Extending from the Humber to within 15 miles of the Thames, the Association's territory covers five whole counties and parts of four others. Within this area, which includes the whole area of the Eastern Gas Board and part of the East Midlands Gas Board, there are some 122 gas manufacturing stations of widely different production capacities; 74 of them, or 61% of the total, produce less than 100 mill. cu.ft. per annum each, as shown in Table I.

TABLE I.

Size of Manufacturing Stations (mill. cu. ft. per annum)	No. of Stations	% of Total
Over 1000	11	9·0
501–1000	8	6·6
101– 500	29	23·7
51– 100	10	8·2
11– 50	46	37·7
Under 11	18	14·8
TOTAL	122	100.0

At the end of the Association's year 1950-51 there were 102 members and eight associate members on our books—a total of 110. Table II shows that 88% of the membership is supplied by stations producing over 100 mill. cu.ft. per annum.

TABLE II.

Size of Manufacturing Stations (mill. cu. ft. per annum)	No. of Stations	No. of Stations providing members	No. of Members	% Total Membership
Over 1000	11	8	45	40·9
501–1000	8	5	19	17·3
101– 500	29	17	33	30·0
51– 100	10	4	8	7·3
11– 50	46	5	5	4·5
Under 11	18	—	—	—
TOTALS	122	39	110	100·0

About 58% of the members come from stations producing more than 500 mill. cu.ft. per annum. The Association has members in 13 out of 19 such stations and the six stations in which it has no members are all on the fringe of London. Although support from those stations would be welcomed, there are obvious advantages in their supporting the London and Southern Association.

Out of 103 stations which produce less than 500 mill. cu.ft. per annum, 26 provide 46 members, or 42% of the total membership. This small proportion is not in any way caused by lack of interest or enthusiasm on the part of the technical personnel of the smaller undertakings, but it does reflect the particular conditions which affect our area, for very many of these stations have no technical staff at all, apart from the senior official.

The Gas Act and Integration

Small production units cannot usually operate at so high an efficiency as large ones. The Gas Act has done much to simplify statutory and financial obstacles which previously hindered the linking up of undertakings, and the first report of the Gas Council states that 'physical integration figures in the plans of all the boards.' It must, however, be many years before a great degree of integration is achieved, for the Gas Act has done nothing to remove the limitations imposed by scarcity of materials and labour, nor the necessity to justify economically the expenditure involved.

The factors which result in our Association's small membership in relation to the area it covers are also an impediment to rapid integration, but at the same time they provide opportunities for its members which have previously largely been denied to them.

The divisions, sub-divisions and groups, which form units in the decentralised organisation set up under the Gas Act, have brought technical and other resources of the larger manufacturing and distributing stations to all undertakings, including the smallest, and therein lie new fields for the activities of the Juniors. That the fields are rich is well known to juniors who have already been given the opportunity of helping overworked managers who have had neither time to pay attention to many of the finer points of technical control, nor opportunity to reap the financial and other advantages of so doing.

I want, therefore, to refer briefly to two matters of fundamental importance to our industry with which every junior can be directly concerned. They are fuel economy and selling price—by which I mean the price at which we sell our principal product.

Fuel Economy

It has been said for many years that 'profits are made or lost in the retort house.' That statement is as true now as when it was first made, but the retort house is not necessarily the only place where profits can be made by effecting economies.

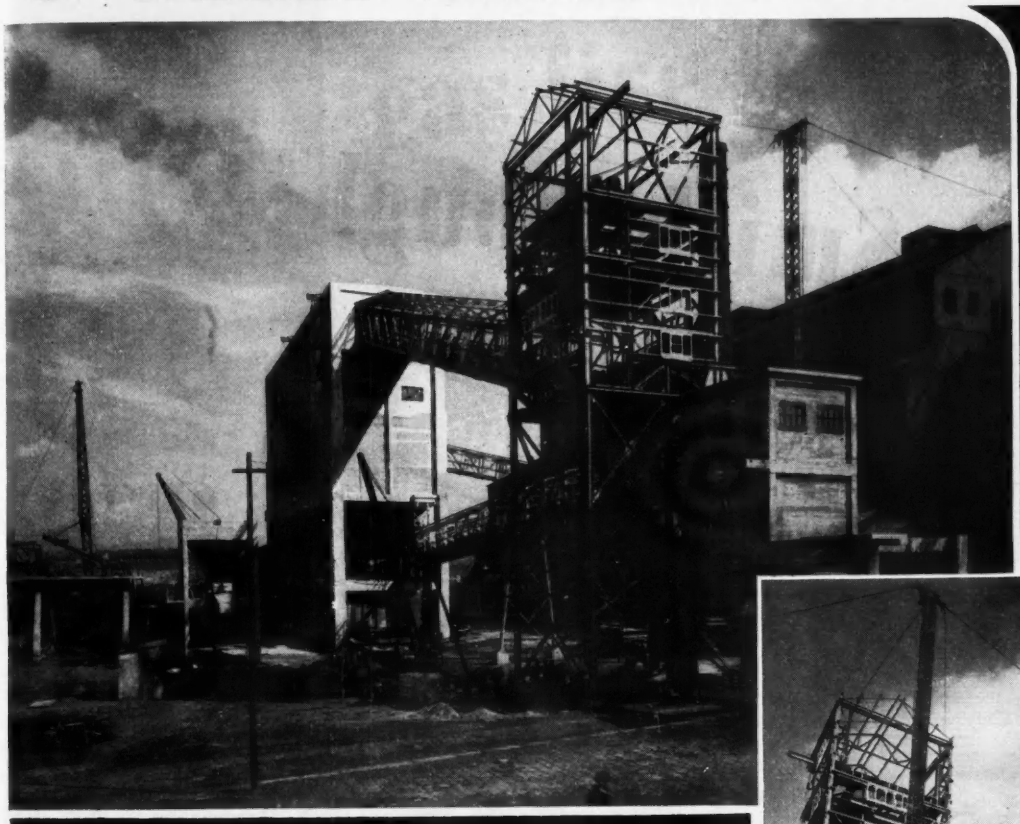
Continuous vertical retorts, intermittent chambers, and horizontal retorts are the three main systems of carbonisation in use in the industry today, and an average figure for producer fuel consumption under ideal conditions is about 12½% of the thermal value of coal, or about 14 lb. of coke and breeze per 100 lb. of coal carbonised. This figure represents normal working under best conditions, and does not allow for 'slow-fire' fuel.

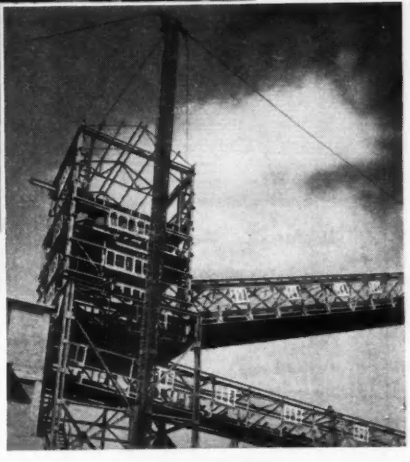
Figures given in the first report of the Gas Council show that for the whole country during the first 11 months of nationalisation, something like three times this quantity was used—about 42 lb. per 100 lb. of coal carbonised. Figures for individual area boards range between 31 and 53 lb.

Thus there appears to be a possible saving of 28 lb. of coke per 100 lb. of coal carbonised, or 5.6 cwt. per ton, which is roughly one half of total coke and breeze available for sale and use on the works, within the period. In practice there are many factors which prevent the whole of this saving being realised, but recovery of only half this quantity would place another 3.6 mill. tons of coke on the market annually.

Among the most important and unavoidable factors operating against full realisation of this saving are:—

COKE HANDLING





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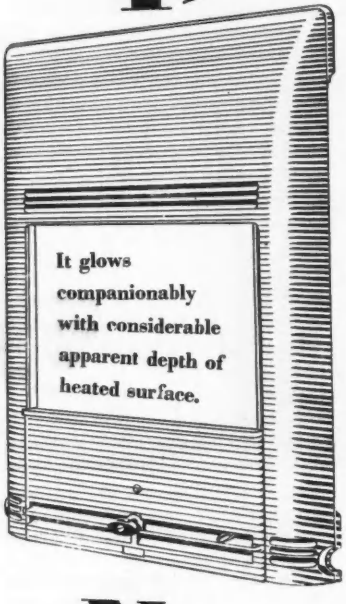

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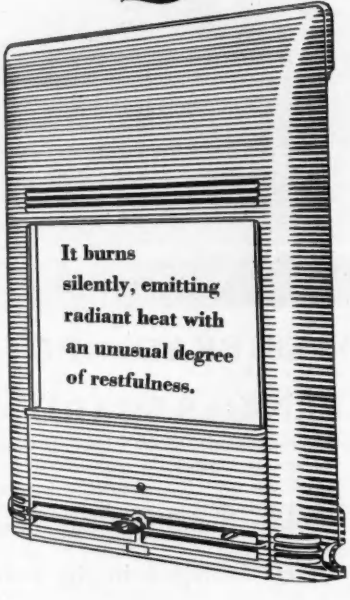

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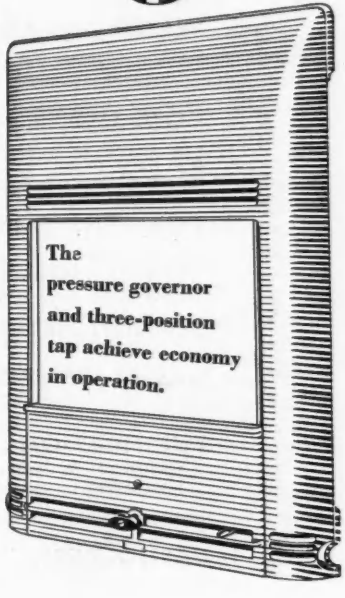

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Announcement

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WALTER KING, LTD., announce that this much-needed Student's Texbook is in course of publication in 10 Sections, to take the place of Volume 1 (published 1948) and the projected Volume 2. This will help to spread the load of expense at this period of continually rising costs and will facilitate the future revision of sections.

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2	**VERTICAL RETORTS.** T. A. Tomlinson, M.B.E., M.I.Mech.E., F.Inst.F. M.Inst.Gas E. *(West's Gas Improvement Co. Ltd.)*	72	44	7/9
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SECTIONS 2 and 5 are now available. Sections 3 and 10 will be ready shortly; other sections are well in hand. Pleaase watch this advertisement for further progress news.

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(i) fuel required for raising heats;
(ii) fuel required to maintain standby carbonising plant at or near working temperature for meeting peak loads, principally during winter months;
(iii) the use of some units of carbonising plant below their nominal capacity because the units are too large to measure up exactly to the demand for gas at certain periods of the year.

The smaller the undertaking the more adversely will these factors operate against the overall fuel economy and this, while in itself a strong case for integration, focuses attention on the great importance of selecting carbonising units of the best size for economical operation under given conditions.

Every undertaking must bring additional production plant into use for the winter months, entailing in the case of carbonising plant, use of fuel in raising heats, and loss of valuable heat in cooling down at the end of the winter.

The duration of periods for raising heats needs to be watched carefully because fuel can easily be wasted by prolonging them unduly. On the other hand it is false economy to curtail such periods to the point where there is risk of causing damage to plant incurring more cost to rectify than the value of the fuel saved.

The fuel used in individual undertakings in raising and lowering heats to accommodate the variations between winter the summer loads is very considerable, and it becomes aggravated in undertakings where night shifts and week-end shifts are not normally worked.

In a single undertaking the maximum week's output of gas may be anything from 1.4 to 2.6 times the minimum week, and the ratio of output in the three heaviest winter months to that in the three lightest summer months may lie anywhere beween 1.6 and 2.2 in undertakings supplying over 100 mill. cu.ft. per annum.

The effect of character of load on these ratios and on the proportion of productive capacity required during the three summer months is shown in Table III.

TABLE III.

Undertaking	Proportion of Non-Domestic Load (%)			Ratio of 3 winter to 3 summer months	Proportion of total production plant capacity required in 3 summer months (%)
	Industrial (*a*)	Commercial (*b*)	Total (*a*) × (*b*)		
A	4	20	24	2·2	45·5
B	32	15	47	1·9	52·6
C	35	12	47	1·8	55·5

The majority of small works have only one type of production plant, so that some plant must be shut down more frequently than is dictated by the necessity for resetting or repairs, with adverse effects on the producer fuel consumption and life of the plant.

Integration schemes should therefore be planned with carbonising units which can be maintained in operation continuously between consecutive resetting or repair periods, and an ample proportion of water gas plant should be provided to meet the peak demands at low capital cost and maximum economy in fuel requirements. Extension of this principle whereby several production stations are linked together, forming a grid, could conceivably effect further capital saving by reducing the amount of standby production plant needed. The saving in capital and fuel in certain circumstances may well be greater than the cost of compressing and pumping gas from one station to another when a production unit is out of action for repair.

Other Sources of Economy

In addition to the cases already mentioned, further economies can be made by ensuring that producers supplying carbonising plant working at full capacity are operating at maximum efficiency. The majority of works which have been unable to benefit from adequate technical supervision in the past will provide ample scope for juniors to secure economies along these lines. Low producer fuel consumption is not an indication of efficiency in the retort house unless it is accompanied by a good yield of gaseous therms.

From a fuel efficiency viewpoint an extra gaseous therm per ton of coal increases the fuel efficiency by about 0.3%, but if, in order to obtain the additional therm in the gas, an extra therm of coke is consumed in the producer—if the fuel consumption increases from 14.0 to 14.4 lb. per 100 lb. of coal—there is no gain in fuel efficiency.

There is, however, a financial gain since a therm of run-of-retort coke is worth about 3.25d., whereas the current cost of gas into holder is more than double that figure, but this gain also disappears if production of an extra gaseous therm per ton requires an increase of more than about 6% in producer fuel consumption—that is from 14.0 to 14.8 lb. per 100 lb. of coal.

Fuel consumption has so far been referred to in terms of lb. per 100 lb. of coal carbonised, but when assessing the effects of increasing the gaseous thermal yields it is more useful to express it in terms of lb. of coke per therm of gas, optimum figures for large installations of continuous verticals and horizontals working regularly being 3.5 and 5.0 lb./therm respectively.

At current prices each cwt. of coke saved per ton of coal carbonised is equal to slightly more than a halfpenny per therm of gas produced, apart from the importance of releasing more coke for public use at the present time when the country's solid fuel requirements outstrip its production. It is also well worth while examining the quantity of coke and breeze used on the works outside the retort house.

Another source of fuel economy, in which every works junior can assist, is that of steam raising. It is not possible to justify waste heat boilers on works of much less than 60 mill. cu.ft. annual capacity, and steam required must be raised in solid fuel fired boilers. Under conditions existing in the average small gasworks the efficiency of steam raising can rarely be very high. Neither are conditions generally conducive to a high efficiency in steam usage. A figure of 1.25 cwt. of coke and breeze used under solid fuel fired boilers per ton of coal carbonised is not unduly large where there is no waste heat steam available, and it would be interesting for juniors to observe how closely this figure is approached.

In some works no steam for process work is called for, and it is then desirable to investigate whether steam can be dispensed with entirely except for preventing freezing of seals on gasholders in severe weather, providing there is a suitable alternative for driving the exhauster in emergency.

As an example the case of a 40 mill. per annum works may be quoted in which the installation of two relatively small electric motors resulted in a daily saving of about 8 cwt. of coke—equivalent to 32s. a day. The electricity used for the work previously done by steam cost less than 6s. per day.

The Gas Industry and Fuel Crises

The situation created by nationalisation provides the greatest opportunity the gas industry has had for many years to demonstrate the vital contribution it can make to the solution of the fuel crises which have been a recurrent feature of the past few winters.

The full weight of the industry's contribution cannot be achieved at once, for integration must necessarily be a slow process at first. For a long time past gas engineers have realised the importance of waste heat, and attention is now being focused increasingly on that subject. The development of the gas turbine provides still greater scope for utilising an existing source of energy, and we have recently been told that where electricity is generated on gasworks from waste heat, at least 50% more can be obtained by the use of the gas turbine where the carbonising unit is of sufficient size.

Present conditions in the Cambridge division are no doubt typical of many others, and may be quoted as an example of the contribution which can be made to both the national fuel situation and the public power supply. In that division, approximately 70% of the total coal used is carbonised in undertakings of over 500 mill. cu.ft. annual capacity, and

although waste heat steam is used to the fullest extent, none of it is used in turbine-driven generators, and only a negligible proportion is used in steam-electric generators. Until recent years, very little electricity generated on gasworks was sold to the public electricity supply undertakings.

One of the most heartening things in recent months is the setting up by the Minister of Fuel and power of a committee 'to investigate the wider aspects of national fuel policy.' It is to be hoped that the contribution which the gas industry can make in more than one direction will not be overlooked on this occasion.

Potential Expansion of Gas Sales

There has never been geater possibility of expansion of gas sales than at the present time. Scarcity of solid fuel naturally makes consumers turn to readily available alternatives, and examination of gas consumption per consumer in rural communities—or per head of population—reveals the scope there is.

Again quoting the Cambridge division annual thermal consumptions per consumer after eliminating industrial consumpton, vary from:—

60-100 in rural communities where a gas supply has been available only within the last four years.

110-135 in small isolated rural communities mainly agricultural in character

and 135-200 in rural communities bordering on larger towns, and in medium and large size towns mainly of a residential character, including those where domestic central heating by gas has been well developed.

Gradual linking up means that, in rural areas, gas will for the first time become an alternative supply in many small towns, villages and hamlets. The number of such places in East Anglia without a gas supply is considerable. Close co-operation of the sales departments with production and distribution staffs has never been more necessary. The economics of integration may be vitally affected by advice well founded on factual information as to potential sales developments, and which is necessary in the determination of main sizes, pumping pressures and selection of compressing plant when linking up schemes are contemplated. Subsequently, when districts are newly supplied with gas, or where consumption per consumer is below average, adequate support of the sales staff by well planned sales campaigns backed up by efficient salesmanship of the highest order is essential to secure the building up of a good load factor in the shortest possible time. The importance of a good load factor in reducing capital charges per therm on production and distribution plant and its effect on selling price does not need emphasising.

Economies in Distribution and Fittings Costs

The cost of distributing gas represents something like 7-13% of the total cost, whereas net manufacturing costs are of the order of 65-80%. It is, nevertheless, well worth examining what probable economies exist between the works and the consumers' appliance. The following are suggested for consideration:—

(*a*) careful design of distributing systems;
(*b*) reduction of unaccounted-for gas;
(*c*) insistence on a high standard of installation;
(*d*) the best use of manpower.

The design of distributing systems will vary according to geographical characteristics as well as load characteristics, and to a certain extent development is controlled by what already exists. The scope now available for linking up adjacent undertakings gives more than normal opportunity for redesigning existing systems, and for improving and equalising supply pressures.

In the average low pressure distribution system designed to give adequate pressures throughout a district under peak load conditions, the full capacity of the mains is used for perhaps only a few hours every year, especially in districts which are mainly residential.

New housing estates are commonly situated remotely from gasworks and since domestic consumption introduces a midday peak load reaching a maximum on Sundays, the creation of such estates frequently involves the laying of considerable lengths of trunk or feeder mains in addition to the estate mains in order to ensure that adequate pressures are available when the demand is greatest. Further, the spacing and layout of houses on many new estates are such that consumption per mile of main is appreciably lower than in the terrace and parallel line types of layout which were more common 20 years ago.

The effect of unaccounted-for gas on selling price is best shown by an example. With gas saleable at 20d. per therm, including distribution, administration and overhead charges—the selling price must be increased by just over 1d. per therm for each 5% of unaccounted-for gas, if revenue is to equal expenditure.

The Junior's Opportunity

The question arises as to how juniors in the industry can best fit themselves to take advantage of the opportunities which exist for the industry's advancement, and, incidentally, the improvement of their own prospects. The Gas Act places the responsibility for programmes of education and training on the Gas Council and the area boards, and the facilities now being provided, and which will be available in the future, are greater than any which have previously been open to the junior.

It must not be overlooked, however, that the training provided, enabling the junior to become qualified and well equipped to serve the industry, cannot go beyond a certain point. Further progress is dependent on the individual being willing to equip himself by additional study, by developing a capacity for independent thought and sound judgment, and by readiness to accept leadership and responsibility courageously when the time comes.

The educational provisions of the area boards can foster this further development of individual ability by establishment of adequate reference libraries at sub-divisional or group levels, stocking them not only with recognised text books on gas technology and related subjects, but including works on such subjects as administration, costing, accountancy, chemical engineering, with all of which the gas industry is very much concerned. Standard codes of practice and appropriate British standard specifications should always be included. It is surprising how many juniors do not have access to the latter publications, and it would be interesting to know how many undertakings make copies of the technical Press available to their juniors and how many bind them for future reference.

I would make a strong plea that area boards should interest themselves in the bound volumes of the British Junior Gas Associations Joint Proceedings for they are a mine of concentrated information more up to date than normal text books, which cannot eocnomically be published annually as the Proceedings are. They cover a wider field than any text book and are a source of inspiration to the enthusiastic junior who has a real desire for progress. One copy, at least, should be available for reference at the headquarters of every divisional or group office in the industry. This would overcome the problems many juniors experience, due to the cost of these volumes and the space required to store them. These are the reasons, I am sure, and not lack of interest, why so few copies of last year's transactions have been purchased by members of this Association.

There are few industries of the size and importance of ours which offer equal opportunities for the young technician of today. Let us remember that the junior of today is the senior of tomorrow. It therefore behoves the junior to prepare himself for the future, and the senior to encourage him, by personal interest and guidance, by providing opportunities of acquiring a sense of responsibility, initiative, and leadership, so that the future of the industry may be in good capable hands when the senior of today retires from active duty.

Probably never before has the scope been so great for the junior who prepares himself, thinks for himself, develops a forward outlook, and is willing to take responsibility.

TRADE NEWS

Kayenco Gas Boilers

Messrs. E. Allan-Cooper & Co., Ltd., publicity agents for Messrs. Fredk. Kay (Engineering) Ltd., call our attention to the '51 Series' of welded steel fully automatic gas boilers for central heating and domestic hot water. Early delivery of all models can be given; the following units being available:

Model	Output B.Th.U.	Size, In. H.	W.	D.
A	25,000	31	11	15
2A	70,000	31	17	21
3A	100,000	31	23	21
B	151,000	45	17	36
C	210,000	47	23	38
D	300,000	47	29	38
E	420,000	47	48	38
F	600,000	47	62	38

Combustion performance complies fully with B.S.S. No. 717. Particular attention has been paid to accessibility to waterways and flueways for maintenance purposes, and the stong mild steel jackets are heavily insulated with cellular asbestos to reduce rediation losses to the barest minimum. All controls with necessary inter-connecting fittings are provided, thus greatly simplifying insulation, but these items will be supplied separately instead of mounted on the rear panels as hitherto.

Owing to increasing turnover, the Company had hoped to offer the new models to the trade at lower prices than before; but unfortunately the recent enormous increase in cost of steel has prevented this. But there is to be no increase in price compared with last year.

An efficient after-sales service is provided. (*Federick Kay (Engineering) Ltd., Nashleigh Hill, Chesham, Bucks.*)

Henry Wiggin & Co.

A new publication presents, in a convenient form, all the available information on the Nimonic series of alloys. In addition to tables of physical and mechanical properties, a useful series of graphs gives design data of these nickel-chromium alloys at various temperatures. In this section appear some data only recently determined as a result of the long-time creep testing which is still in progress.

Other sections summarise the heat-treatment and acceptance creep tests laid down in the appropriate D.T.D. Specifications. A list of typical applications shows that these nickel-chromium alloys, in addition to their use as the standard creep-resisting material for turbine blades in British aircraft gas turbines, have a wide field of application for many other components operating at elevated temperatures.

Copies are available from *Henry Wiggin & Co., Ltd., Wiggin Street, Birmingham, 16.*

James Gordon & Co.,

The above Company has developed a new type of servomotor to operate in conjunction with Hagan relays and automatic regulators. This has all the advantages of the simple servomotors, but in addition is far more powerful and therefore can be used in cases where the standard piston type would fail.

With compressed air at 100 lb. per sq. in., it will operate against a resistance torque of 47,000 lb., while when moving from rest the lever is capable of exerting a torque of 70,000 lb. This is particularly valuable in lifting single seated tight shutting H.P. steam valves off their seats and for other applications where the starting torque is high.

The 'Gordon-Hagan A640' servomotor is an extremely powerful and flexible machine of very robust construction well suited for the most arduous and exacting industrial service.

—*James Gordon & Co., Ltd., Dalston Gardens, Stanmore, Middlesex.*

Quasi-Arc

Following the successful introduction earlier this year of its Radian (New Type) electrode for mild steel welding, Quasi-Arc has now issued a six-page technical circular giving details of the mechanical properties and chemical composition, welding techniques, deposition and packing data, as well as the applications and characteristics of the electrode. Copies of this new technical circular can be obtained from *The Quasi-Arc Co., Ltd., Bilston, Staffs.*

British Sulphur Corporation

The British Sulphur Corporation has been registered with a nominal capital under the auspices of the Sulphur Exploration Syndicate. The syndicate is composed of leading consumers of sulphur in the United Kingdom, and includes Imperial Chemical Industries, Monsanto Chemicals, and Fisons.

Its object is the systematic exploration of sources of sulphur all over the world which might eventually be exploited for the benefit of this country and international trade. The new company will provide a vehicle for this work.

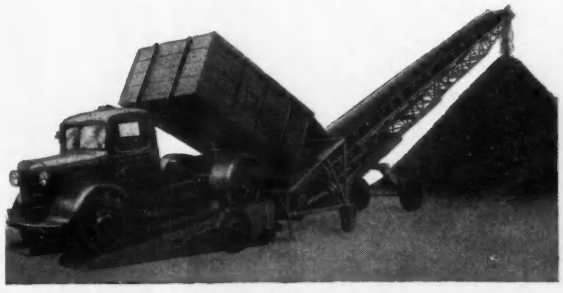
Members of the syndicate will not necessarily participate financially in the company's activities, and the amount of finance required and its source are matters on which no decision has been taken.

C. H. Johnson

There has been for a long time a need for mobile equipment to take the discharge direct from end tipping lorries and form stockpiles up to 20 ft. in height. This has been done by discharging from the lorry on to the ground, picking up by power shovel or grab and discharging into a portable conveyor. C. H. Johnson (Machinery), Ltd., are producing a set of portable equipment which will take the feed direct from lorries, thus dispensing entirely with the power shovel.

This equipment consists of the Hylo-veyor, a special portable wide hopper, and a mobile ramp. The hopper is wide enough to take all widths of lorry and is mounted on four pneumatic wheels, two of which are fitted to the swivelling axle which is complete with a steering arm. This hopper straddles the bottom section of the Hylo-Veyor and is designed so that the conveyor can operate from horizontal to maximum discharge height to eliminate breakage of material.

The mobile ramp consists of two troughs of chequered plate of sufficient width to accommodate all lorry wheels. These troughs are 12 ft. long, being braced together and supported in a braced structure which gives a vertical height of 2 ft. at the back of the troughs. The side plates to the troughs are splayed out at the bottom to give a certain amount of guidance to the lorry wheels. The complete machine is mounted on two pneumatic wheels which are attached to pivoting brackets fixed to the structure. These brackets are in turn attached to two hydraulic jacks operated by one hand pump mounted on the machine. When the ramp is in the operating position, the wheels are retracted and the ramp sits on its base. To move the ramp, the jacks are pumped up, lifting the machine clear from the ground, when it can be easily moved around by a hand bar fixed between the troughs. For moving the ramp any distance, a tow bar is supplied for attaching to lorries. *C. H. Johnson (Machinery), Ltd., Stockport.*



The 'Hylo-Veyor' ramp loader combination.

Permac
METAL-TO-METAL JOINTING MATERIAL

Ever since 1913 "PERMAC," the original Metal-to-Metal Jointing, has been holding up difficult joints in Gas Works and on Coke Oven Plants all over the world. Equally suitable for any joint—steam, water, gas, oil, benzol, ammonia, etc.—screw pipe or flange.

Instant full pressure when the joint is made

THOMAS & BISHOP LTD.
39, ARTHUR ROAD, LONDON, S.W.19.

COMPANY NEWS

NEW CONVEYOR COMPANY

Tube Investments is to acquire the New Conveyor Company of Smethwick, which specialises in the production of all types of mechanical handling equipment. New Conveyor activities include the full mechanisation of factories, complete installations for electrical power stations, gasworks, etc. It will continue as a separate entity with Mr. W. R. Purnell as chairman and managing director.

C. C. WAKEFIELD

The result of the offer by C. C. Wakefield and Co., of 227,500 10s. ordinary shares at £2 10s. and £1,250,000 4½% first mortgage debenture stock 1961-81 at par, which closed on September 20, is that subscriptions have been received for 96½% of the shares, leaving 3½% to be taken up by the underwriters.

The issue of 4½% first mortgage debenture stock 1961-81 was heavily oversubscribed. Every applicant received an allotment varying from full allotment on the smaller amounts to 8% on the largest applications.

COLONIAL GAS ASSOCIATION

Net profit for the year ended June 30, 1951, after providing £23,000 for taxation, is £107,059.

The net profit is a return of 5.13% on the shareholders' funds. Final ordinary dividend 3% (3½%), to make 6% (same); forward £16,609. For the first seven months gas sales increased. From February last supplies of gas in Victoria were heavily rationed, largely counteracting the earlier increases. For the year, sales increased by 7.5% and sales by subsidiary gas companies by 8%. Although investigations by Gas and Fuel Corporation are proceeding, negotiations for acquisition of the Victorian business of the company have not reached a stage for any announcement to be made.

CROSSLEY BROTHERS

During the last five years Crossley Brothers, manufacturers of gas engines, has spent £736,695 on new plant and improvements, states Sir Kenneth Crossley, the chairman, in his statement with the accounts to April 30 last. This outlay has enabled the group steadily to increase output and trading profits, but it has required each year a larger charge for maintenance and depreciation. The company will be involved in a fairly heavy annual expenditure in order to keep the plant up to date. With £70,000 placed to group plant replacement reserve from profits, that reserve now stands at £155,000.

Owing to increased productivity and operation of piecework, earnings of the company's workers have never been so high, states Sir Kenneth, who hopes pay packets will go even higher, 'provided that there is higher production at the same time.' Both orders and output for the current year to date show a satisfactory increase over the corresponding period in 1950.

Despite heavy outlays on capital and trading account the group has, by restraint in the distribution of profits, maintained a strong liquid position. Reserves now stand at £1,213,000.

RADIATION LIMITED

The directors of Radiation Limited have declared an interim dividend in respect of the year ending December 31, 1951, on the ordinary stock, at the rate of 5% actual, less income tax (the same as last year), and to pay the half-yearly dividend on the preference stock. Warrants for both dividends will be posted on October 31.

STAVELEY ACQUISITION

The directors of the Staveley Coal and Iron Company announce that they have acquired the whole of the ordinary share capital and the majority of the preference share capital in Tilghman's Patent Sand Blast Company. This company holds the whole of the share capital in its subsidiary company, George Richards and Co., both companies having works at Broadheath, near Manchester. The Tilghman's Patent Sand Blast Company are well-known makers of sand blasting and wheel-abrator equipment, and George Richards and Co. have a world-wide reputation as makers of machine tools.

The existing Boards of Directors have been strengthened by the addition of the following representatives of the Staveley group: Mr. T. A. McKenna, chairman, Mr. M. Froggatt, Dr. J. E. Hurst and Sir Arthur Matthews.

GENERAL ELECTRIC

The 51st annual general meeting of the General Electric Company, Ltd., was held at Magnet House, Kingsway, W.C., on September 27, Sir Harry Railing, the chairman and joint managing director, presiding. In the course of his speech the chairman said: The directors' report shows that we have achieved a further increase in our net profit. This result is due to an increase in sales of some 13% following a similar advance during the preceding year. The majority of our establishments have contributed to this record in spite of the difficulties of obtaining additional labour and sufficient raw materials. These results have been made possible only by the additional capital retained since the war in the company's reserves which has been used to provide increased manufacturing facilities and stock finance. It is well to remember that during the last five years your company has spent £5,800,000 on buildings, plant and fixtures alone.

After allowing £1,038,000 for depreciation, £106,000 more than last year, and other provisions, we show a profit of £5,650,000 before taxation. Taxation now absorbs £3,640,000, and we are allowed to keep one-third of the profit we have earned. During the last four years taxation has withdrawn £11 mill. from your company's capital, while the net dividends paid to the stockholders amount to £2,446,000. You will note that the directors after having allocated £780,000 to general and stock depreciation reserve, and £750,000 to additional plant replacement reserve, have recommended the payment of a 10% dividend on ordinary stock as before and of a bonus of 12½% as against 7½% last year.

Interim Dividend Announcements

C. C. Wakefield, 10% (same).
Powers-Samas, 17½% (same).

BOLT down those new machines and get them working right away with Rawlbolts! Rawlbolts save time — no grouting-in — no waiting for cement to harden. Fix the switchgear — wiring — lighting — fire and canteen fittings and all similar equipment with Rawlplugs. Rawlplugs are the world's firmest and speediest screw fixings in brick, cement, concrete and all solid materials.

Use Rawlplug Fixing Devices where "speed is the essence of the contract"

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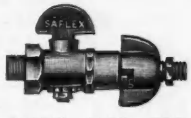
OUR IMPROVED PATENT "SAFLEX" PLUG-IN COCK
TO SUIT ALL PORTABLE GAS APPLIANCES
WASH BOILERS &c.
Wm. WHITEHOUSE and Company Ltd.
Manufacturers of Gas Main Cocks, Plug-in Cocks, etc.
Empire Works, Brueton Street . . . . BIRMINGHAM 4



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"BROWNOX-de-LUXE" PURIFYING MATERIAL
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EWART CHAINBELT CO., LTD.
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Driving and Conveyor Chains of the best quality; made of Ley's Celebrated Blackheart Malleable Iron.
ALSO COMPLETE CONVEYORS AND ELEVATORS

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Quarterly Volumes of the "Gas Journal."
5/- each, post free
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CONVEYORS.
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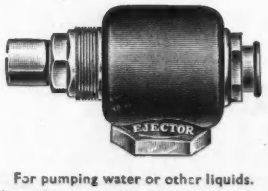

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Send for List:–
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162a Dalston Lane, London, E.8

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FOR PUBLIC LIGHTING
CLOCK CONTROLLER REPAIRS.
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(CLERKENWELL) LTD.
SUTTON WORKS, ARLINGTON AVENUE, ISLINGTON, N.1
Canonbury 2649 Brifulson, Nordo, London.

MISCELLANEOUS

SMALL single truckloads and larger quantities of good ROUGH BREEZE from any gasworks, large or small, in the United Kingdom required by merchants paying own railway tolls. Cash price and particulars to No. 9378, *Gas Journal*, 11 Bolt Court, Fleet Street, London, E.C.4.

CRUDE NAPHTHALENE Wanted; any quantity up to 100 tons. Apply No. 9974, *Gas Journal*, 11, Bolt Court, Fleet Street, London, E.C.4.

PLANT FOR SALE

PHONE 98 STAINES

FOR SALE. Elec. "Morris" Hoist—1 ton—400/3/50.
Two 37 ft. BELT/BUCKET ELEVATORS.
"Marshall" BRITANNIA BOILER, 11 ft. 6 in. × 5 ft. —100 w.p.
5,000 ft. GRAVITY ROLLER CONVEYOR, 14 in. and 18 in. wide.
26 K.W. "Tangye" DIESEL GENERATING SET—220 v. D.C.
HARRY H. GARDAM & CO., LTD.

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WHERE'S YOUR
NU-SWIFT?
The World's Fastest Fire Extinguishers — for every Fire Risk
Pressure-operated by sealed CO_2 Charges
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Telephone CRAWLEY 1212-3. Telegrams: "Balefire, Crawley."

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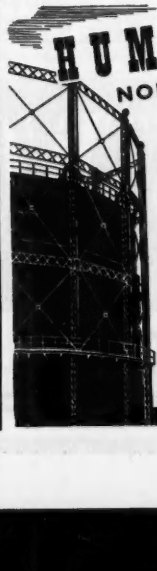
Used by the leading Gas Companies for the protection of lower plates and cuppings of Gasholders. The most efficient anti-corrosion paint in existence. HUMIDINE never cracks, never dries and is absolutely impervious to water. OXYGRAFITE GASWORKS PAINT is also manufactured by . . .
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n.d.h.

PUBLISHERS' NOTICE

The "Gas Journal" is published every Wednesday, price 1/-; by post 1/2d.

Subscription Rates : Home and Empire :- 52/- per annum ; Foreign :- 60/- per annum. (Both payable in advance.) A copy of the "Gas Journal" Calender & Directory is presented each year to continuous subscribers.

Classified Advertisements : All small classified advertisements are charged at 1/9 per line (approx. 7 words) - minimum charge 10/6. A Box Number address occupies 2 lines, and a further 6d. is charged towards cost of postage on replies. Copy must be received by first post on Monday to ensure insertion in that week's Journal.

Displayed Advertisements : Rates obtainable on application to the Business Manager. Change of copy for displayed spaces must be received 14 days prior to publication if proofs are required. Type area of inside pages 10" deep x 7" wide ; block screen 120.

BUSINESS MANAGER : S. T. CULLEN

MIDLANDS OFFICE : 10, Union Street, Birmingham.

NORTHERN MANAGER : W. Q. Foster, 33, St. Helens Road, Harrogate. 'Phone : Harrogate 84291.

WALTER KING, LTD., 11, Bolt Court, Fleet Street, London, E.C.4.

Telephone : CENtral 2236-7. Telegrams : Gasking, Fleet, London.

APPOINTMENTS VACANT

SCOTTISH GAS BOARD

FIFE GROUP.

KIRKCALDY DISTRICT.

DISTRIBUTION SUPERINTENDENT.

APPLICATIONS are invited for the above appointment at a salary in accordance with A.P.T. Grade V, *i.e.*, £425 rising to £505 per annum.

Candidates should have experience in High and Low Pressure Distribution and Industrial Gas work, and be capable of planning, estimating and carrying out distribution schemes. Possession of the Higher Grade Certificate of the Institution of Gas Engineers in Gas Engineering (Supply) will be an advantage.

The successful applicant may be required to pass a medical examination, and to subscribe to such scheme of superannuation as the Board may introduce in the future.

Applications endorsed 'Distribution Superintendent,' stating age, qualifications, and experience, and accompanied by a *copy* of each of three recent Testimonials, should be lodged with the undersigned on or before Monday, October 15, 1951.

JOHN H. FULTON,
District Manager.

Scottish Gas Board,
Fife Group, Kirkcaldy District,
28, Links Street,
Kirkcaldy,
September 18, 1951.

SCOTTISH GAS BOARD

NORTHERN DIVISION.

ABERDEEN DISTRICT.

APPOINTMENT OF DISTRIBUTION ENGINEER.

APPLICATIONS are invited from suitably qualified persons for the post of DISTRIBUTION ENGINEER in the Aberdeen District Undertaking.

Applicants must be Corporate Members of the Institution of Gas Engineers or of an Engineering Institution of similar status and experienced in the design and carrying out of Gas distribution work, the organisation of Stores and Workshops, and the control of staff and workmen.

The candidate selected will be required under the District Manager to assume full responsibility for the day to day control of the Distribution Department of the Gas Undertaking.

The salary scale for the post is in accordance with the Board's scale of salaries for adult Administrative, Professional and Technical Staffs, viz. Provincial 'A' Grade XII £695-£820 per annum with initial placing in accordance with the selected candidate's qualifications and experience.

It is anticipated that a new house to rent may shortly be available.

Applications giving full particulars of age, qualifications and experience, together with *copies* of three recent Testimonials, should be lodged with the undersigned not later than 12.0 noon on Thursday, October 18, 1951.

H. S. MILNE,
Divisional Controller.

50, Cotton Street,
Aberdeen.
September 20, 1951.

SCOTTISH GAS BOARD

LANARKSHIRE GROUP.

TECHNICAL ENGINEERING ASSISTANT AND DRAUGHTSMAN.

APPLICATIONS are invited from suitably qualified and experienced persons for the above post.

Candidates should have drawing office experience in general engineering, steel structures, and plant layout preferably with a large Gas Undertaking or Gas Engineering Contractor, and should possess the Higher Grade Certificate in Gas Engineering (Manufacture) or the Higher National Certificate in Civil or Mechanical Engineering.

The salary scale will be A.P.T. VII £500 to £580 per annum and placing on the scale will be in accordance with experience and qualifications.

The successful candidate will be required to pass a medical examination and will be subject to the provision of any superannuation scheme which the Board may introduce.

Applications stating age, qualifications, present position and previous training and experience, together with the names of two referees, should reach the undersigned within fourteen days of the appearance of this notice.

FRED. R. MITCHELL,
Group Manager.

Gas Offices,
Uddingston,
Lanarkshire

EAST MIDLANDS GAS BOARD

LEICESTER & NORTHANTS. DIVISION.

GASFITTER—RUSHDEN UNDERTAKING.

A VACANCY exists for a FIRST CLASS GAS-FITTER at the above Undertaking. J.I.C. Provincial 'A' rate for gasfitters applies.

A modern flat situated in Raunds, near Rushden, is available at a rental of approximately 16/- per week inclusive of rates.

Applications stating age, qualifications and experience should be addressed to Mr. T. Watson, Local Manager, Gas Works, Rushden, Northants, to be received not later than Monday, October 15, 1951.

J. CORRIGAN,
Sub-Divisional Manager.

45, Abington Street,
Northampton.
September 28, 1951.

EAST MIDLANDS GAS BOARD

LEICESTER & NORTHANTS. DIVISION.

CHIEF DRAUGHTSMAN.

APPLICATIONS are invited for the post of CHIEF DRAUGHTSMAN in the Divisional Drawing Office at Leicester. Applicants must have had practical experience in the design and layout of Gasworks plant and distribution machinery. They must also possess a general knowledge of constructional steelwork and building design.

The salary will be within the range of Grade A.P.T. X (minimum £620, maximum £720) of the National Salary Scales for Gas Staffs according to qualifications and experience.

The post is superannuable and the successful candidate may be required to undergo a medical examination.

Applications stating age, qualifications and experience, and giving the names of two referees, should be addressed to the undersigned to be received not later than October 13, 1951.

C. C. WOOD,
Divisional General Manager.

Millstone Lane,
Leicester.
September 20, 1951.

EAST MIDLANDS GAS BOARD

LEICESTER AND NORTHANTS. DIVISION.

TECHNICAL ASSISTANTS—
LEICESTER UNDERTAKING.

VACANCIES exist for TECHNICAL ASSIST-ANTS in the Leicester Undertaking at the Manufacturing Stations and in the Industrial Heating Department.

Applicants for a position at the Manufacturing Stations should be conversant with the control and operation of all Gas Works plant, and be able to carry out routine testing. Experience in the operation of vertical retorts will be an advantage.

In the case of the Industrial Heating vacancy, applicants should possess a knowledge of the utilisation of gas in industry.

The salary will be within the range of A.P.T. Grade V of the National Salary Scales (£425-£505 per annum) according to age and experience. The posts are superannuable and the successful applicants may be required to undergo a medical examination.

Applications stating age, qualifications, present position and previous training and experience, together with the names of two referees, should be sent to the undersigned to be received not later than October 20, 1951.

C. C. WOOD,
Divisional General Manager.

Gas Offices,
Millstone Lane,
Leicester.
September 29, 1951.

WALES GAS BOARD

GROUP INDUSTRIAL GAS ENGINEERS.

APPLICATIONS are invited from qualified engineers for the above appointments. Applicants are required to be fuel technologists and should have had considerable experience in the design, construction and installation of industrial and commercial plant covering a range of widely representative industries, and should be suitably qualified by examination. The salary attached to these positions will be related to the qualifications and experience of applicants.

Successful applicants will be required to pass a medical examination, and to subscribe to such scheme of superannuation as the Board may adopt.

Applications, stating age and giving full particulars of education, training, qualifications and experience and of salary required, together with the names of two referees, should be addressed to the Industrial Gas Engineer, Wales Gas Board, Bute Terrace, Cardiff, not later than fourteen days after the appearance of this advertisement.

C. B. MAWER, Secretary.

WALES GAS BOARD

PONTYPOOL UNDERTAKING.

RELIEF SHIFT SUPERINTENDENT.

APPLICATIONS are invited for the position of RELIEF SHIFT SUPERINTENDENT at the above Undertaking.

Candidates should preferably have had experience on Woodall-Duckham Continuous Vertical Retorts, and should have had technical training in all gasworks ancillary plant and equipment. Preference will be given to the Candidates holding the Institution of Gas Engineers Higher Grade Certificate in Gas Engineering.

The salary will be within Grade V—Administrative, Professional and Technical—of the National Joint Council for Gas Staffs—Provincial 'A' £425-£505 per annum plus housing accommodation, rent free, which will be provided by the Undertaking. The successful candidate will be required to pass a medical examination.

Applications stating age, qualifications and experience, with two recent Testimonials, should be posted to the undersigned not later than fourteen days after the appearance of this advertisement.

J. POWDRILL, M.B.E.
General Manager.

Wales Gas Board,
Pontypool Undertaking,
Hanbury Road,
Pontypool, Mon.

(*Classified advertisements continued on Supplement* 4)

APPOINTMENTS VACANT (ctd.)

EASTERN GAS BOARD
CAMBRIDGE DIVISION.
DIVISIONAL ACCOUNTANT.

APPLICATIONS are invited from qualified accountants for the post of DIVISIONAL ACCOUNTANT to the Cambridge Division of the Board.

Applicants should be conversant with modern methods of accounting and should have extensive administrative experience and organising ability.

The salary will be not less than £1,250 per annum.

The successful applicant may be required to pass a medical examination and to subscribe to such scheme of superannuation as the Board may adopt.

Applications, which should reach the undersigned within fourteen days of the publication of this advertisement, should state age, qualifications, experience and present employment of the applicant, together with the names of two referees.

J. HUNTER-RIOCH,
Divisional General Manager.

Divisional Chief Office,
52, Sidney Street,
Cambridge.
September, 1951.

EASTERN GAS BOARD
IPSWICH DIVISION.
HOME SERVICE ADVISER—CHELMSFORD.

APPLICATIONS are invited from suitably qualified and experienced persons for the above position.

Candidates should have had at least two years training, possess a recognised diploma and have had practical experience in the duties concerned, which include the giving of cookery and other demonstrations, lecturing, running practical cookery classes and visiting consumers in their own homes to advise on the correct use of gas appliances.

The commencing salary will be at the rate of £364 per annum (Grade A.P.T. VI National Salary Scale, Provincial 'A').

Applications, stating age and full particulars of training and experience should be forwarded to the undersigned to reach him not later than fourteen days after the appearance of this advertisement.

W. J. COLLINS GARRARD,
General Manager,
Ipswich Division.

Eastern Gas Board,
Ipswich Division,
Crane Hill Lodge,
London Road,
Ipswich,
Suffolk.
September 25, 1951.

EASTERN GAS BOARD
IPSWICH DIVISION.
GROUP DISTRIBUTION & SALES MANAGER,
CHELMSFORD GROUP.

APPLICATIONS are invited from suitably qualified and experienced persons for the above position.

Under the general direction of the Group Manager, the appointment carries with it responsibility for the planning and laying of mains, and for the organisation and supervision of the fitting departments, the stores and showrooms.

The commencing salary will be at the rate of £720 per annum (Grade A.P.T. XII National Salary Scale, Provincial 'A').

The successful candidate may be required to pass a medical examination.

Applications, stating age, and giving full particulars of education, training and experience, should be forwarded to the undersigned, to reach him not later than fourteen days after the appearance of this advertisement.

W. J. COLLINS GARRARD,
General Manager,
Ipswich Division.

Eastern Gas Board,
Ipswich Division,
Crane Hill Lodge,
London Road,
Ipswich,
Suffolk.
September 25, 1951.

NORTH WESTERN GAS BOARD
WIRRAL GROUP.
STATION ENGINEER—
BIRKENHEAD WORKS.

APPLICATIONS are invited for the above position at a salary of £900 per annum.

The successful applicant will be responsible to the Group Production Engineer for the operation and maintenance of all the Gas Works Plant, which includes 6 million cu. ft. per day of Woodall Duckham Vertical Retorts and 4 million cu. ft. per day of Carburetted Water Gas.

The successful applicant may be required to pass a medical examination and to subscribe to such superannuation scheme as the Board may adopt.

Applications, furnishing personal details and particulars of training, qualifications and experience, together with the names and addresses of two referees, should reach the General Manager, North Western Gas Board (Wirral Group), Hind Street, Birkenhead, within fourteen days of the publication of this advertisement.

NORTH WESTERN GAS BOARD
OLDHAM-ROCHDALE GROUP.
TECHNICAL ASSISTANT.

APPLICATIONS are invited for the position of TECHNICAL ASSISTANT to the Station Engineer at the Gas Works, Heywood.

Candidates should have a good knowledge of Gas Works Chemistry and experience in the control and running of a Gas Works. Experience on vertical retort installations will be an advantage and also experience in the Drawing Office.

The salary for this position will be within the range of £425/£505 per annum, in accordance with Grade A.P.T. V of the National Salary Scales for the Gas Industry, and the commencing salary will be decided in accordance with the qualifications of the person appointed.

The successful applicant may be required to pass a medical examination and to subscribe to such scheme of superannuation as the Board may adopt.

Applications suitably endorsed "Technical Assistant" and giving personal details, particulars of training, qualifications and experience, together with the names and addresses of two referees should be forwarded to the General Manager, North Western Gas Board, Oldham-Rochdale Group, Gas Offices, Dane Street, Rochdale, to arrive not later than twelve days from the date of this advertisement.

WEST MIDLANDS GAS BOARD
BIRMINGHAM DIVISION.
SECOND ENGINEERING ASSISTANT—
BIRMINGHAM DISTRICT.

APPLICATIONS are invited for the above position.

The duties will largely entail technical work and supervision in large retort houses producing up to 26 mills. cu. ft. per day in continuous vertical retorts.

Facilities for all-round works experience will be afforded.

The salary for the post will be not less than £540 per annum on commencement, rising by annual increments to a maximum of £620 per annum, in accordance with Grade VIII of the salary scales of the National Joint Council for Gas Staffs.

Candidates should be Corporate Members of the Institution of Gas Engineers or hold a University Degree.

The successful applicant may be required to pass a medical examination and will be subject to such Superannuation Regulations as the Board may, in due course, adopt.

Applications stating age, training, qualifications and experience, together with the names of two referees, should be sent to Mr. J. E. Wakeford, Divisional Manager, West Midlands Gas Board, Birmingham and District Division, Gas Offices, Edmund Street, Birmingham, 3, to reach him not later than fourteen days after the appearance of this advertisement. Applicants are requested to quote ref. T.P.3, when replying to this advertisement.

F. H. CURETON,
Secretary.

WEST MIDLANDS GAS BOARD
WARWICKSHIRE DIVISION.
SENIOR ACCOUNTANCY ASSISTANT—
DIVISIONAL OFFICE.

APPLICATIONS are invited for the above position at the Divisional Office, Coventry.

The salary for the post will be not less than £620 per annum, rising by annual increments to a maximum of £720 per annum, in accordance with Grade X of the salary scales of the National Joint Council for Gas Staffs.

The duties of the post will include routine supervision of general accounting matters and the preparation of financial statements.

Experience in the gas industry and the possession of a professional qualification will be advantageous.

The appointment will be subject to such superannuation regulations as the Board may, in due course, adopt. The successful candidate may be required to pass a medical examination.

Applications, stating age, qualifications and experience, together with the names of two referees, should be addressed to Mr. A. Allen, Divisional Manager, West Midlands Gas Board, Warwickshire Division, Gas Street, Coventry, to reach him not later than fourteen days after the appearance of this advertisement. Applicants are requested to quote ref. T.P.3 when replying to this advertisement.

F. H. CURETON,
Secretary.

NORTH EASTERN GAS BOARD
YORK-HARROGATE GROUP.
ASSISTANT SENIOR HOME SERVICE ADVISER.

APPLICATIONS are invited for the above vacancy in the York-Harrogate Group, the appointment being within the A.P.T. Scale V (£340-£404 per annum) of the Salary Scales agreed by the National Joint Council for Gas Staffs.

Candidates should hold a qualification in Domestic Science and have experience in the organisation of cookery demonstrations, lectures, home service calls, etc.

The successful candidate will be required to pass a medical examination and subscribe to such scheme of superannuation as the Board may introduce.

Applications, giving particulars of training, qualifications and experience together with *copies* of two Testimonials to be forwarded to the Group General Manager, 48, James Street, Harrogate, within fourteen days of publication of this notice.

J. C. GARDNER,
Secretary.

Bridge Street,
Leeds, 2.
September 26, 1951.

PATENTS

NOTICE is hereby given that Humphreys & Glasgow Ltd. seek leave to amend the Complete Specification of the Application for Letters Patent No. 654280 for an invention entitled Manufacture of carburetted water gas.

Particulars of the proposed amendments were set forth in the Official Journal (Patents), No. 3267 dated September 26, 1951.

Any person may give Notice of Opposition to the amendment by leaving Patents Form No. 36 at the Patent Office, 25, Southampton Buildings, London, W.C.2, on or before October 26, 1951.

J. L. BLAKE,
Comptroller-General.

THE "FLUXITE QUINS" AT WORK

"You know I've told you before,
To fix pipes with FLUXITE for sure".
Said Oi "Yes, alas,
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The shanty's the shanty no more!"

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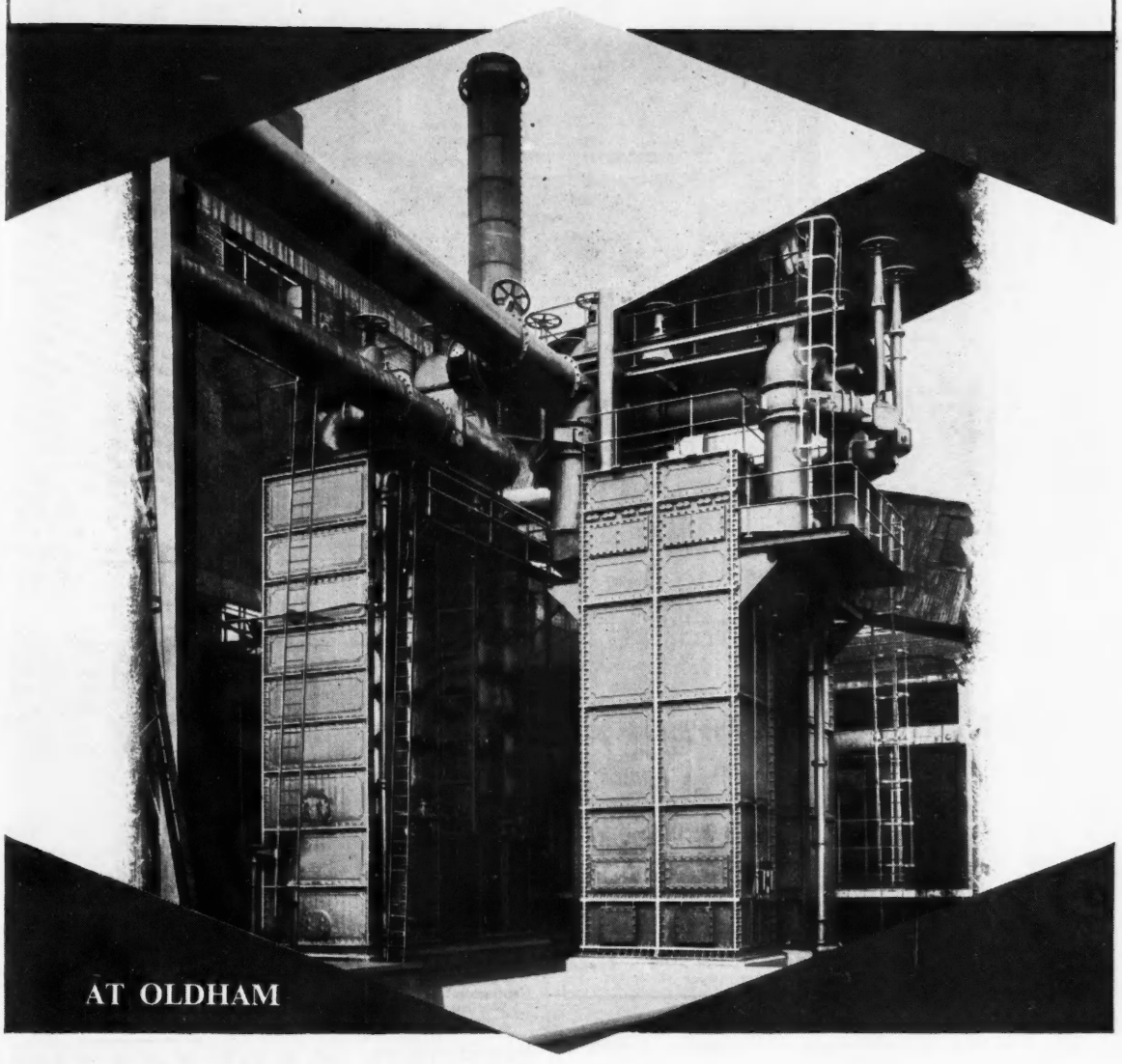
MODERN CONDENSING PRACTICE



AT OLDHAM

Two types of Holmes high efficiency Condensers installed at the Oldham Gasworks.

Left. Super Type Horizontal Tube Condensers mounted upon tar and liquor separators.

Right. Multipass Vertical Tube Condensers, incorporating Holmes patent sprays for maintaining clean internal conditions.

Reproduction by courtesy of the North Western Gas Board.

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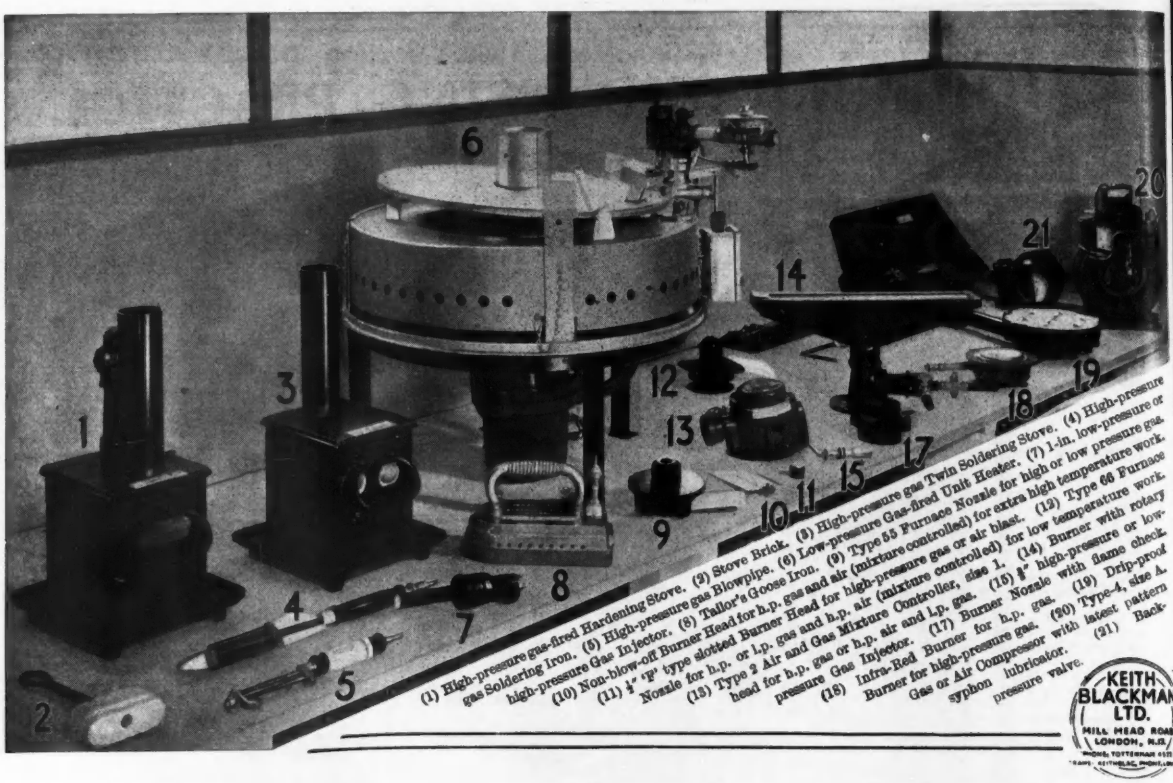

(1) High-pressure gas-fired Hardening Stove. (2) Stove Brick. (3) High-pressure gas Twin Soldering Stove. (4) High-pressure gas Soldering Iron. (5) High-pressure gas Blowpipe. (6) Low-pressure Gas-fired Unit Heater. (7) 1-in. low-pressure or high-pressure Gas Injector. (8) Tailor's Goose Iron. (9) Type 55 Furnace Nozzle for high or low pressure gas. (10) Non-blow-off Burner Head for h.p. gas and air (mixture controlled) for extra high temperature work. (11) ¼" 'g' type slotted Burner Head for high-pressure gas or air blast. (12) Type 66 Furnace Nozzle for h.p. or l.p. gas and h.p. air (mixture controlled) for low temperature work. (13) Type 2 Air and Gas Mixture Controller, size 1. (14) Burner with rotary head for h.p. gas or h.p. air and l.p. gas. (15) ¼" high-pressure or low-pressure Gas Injector. (16) Infra-Red Burner for h.p. gas. (17) Burner Nozzle with flame check. Burner for high-pressure gas. (18) Drip-proof Gas or Air Compressor with latest pattern syphon lubricator. (19) Type-4, size A. (20) Type-4, size B. (21) Back-pressure valve.

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"DEAD-BEAT" RECORDER

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just right and always right for that particular job you have in hand . . . from Retort House to Consumer

Alexander Wright & Co., Ltd. Westminster, S.W.1.

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LARGEST MANUFACTURERS OF GAS MAIN BAGS.
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Impervious to Main Liquor and Climatic Influences.

Round or Cylinder Shape.

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STANDARD TAPER THREADS
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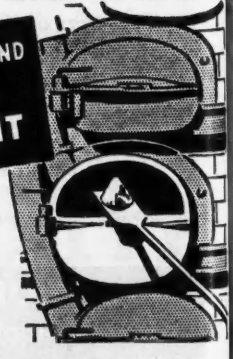
RETORTS MADE GAS TIGHT
when patched with—

ONX SUPER 83 BRAND **FIRE CEMENT**

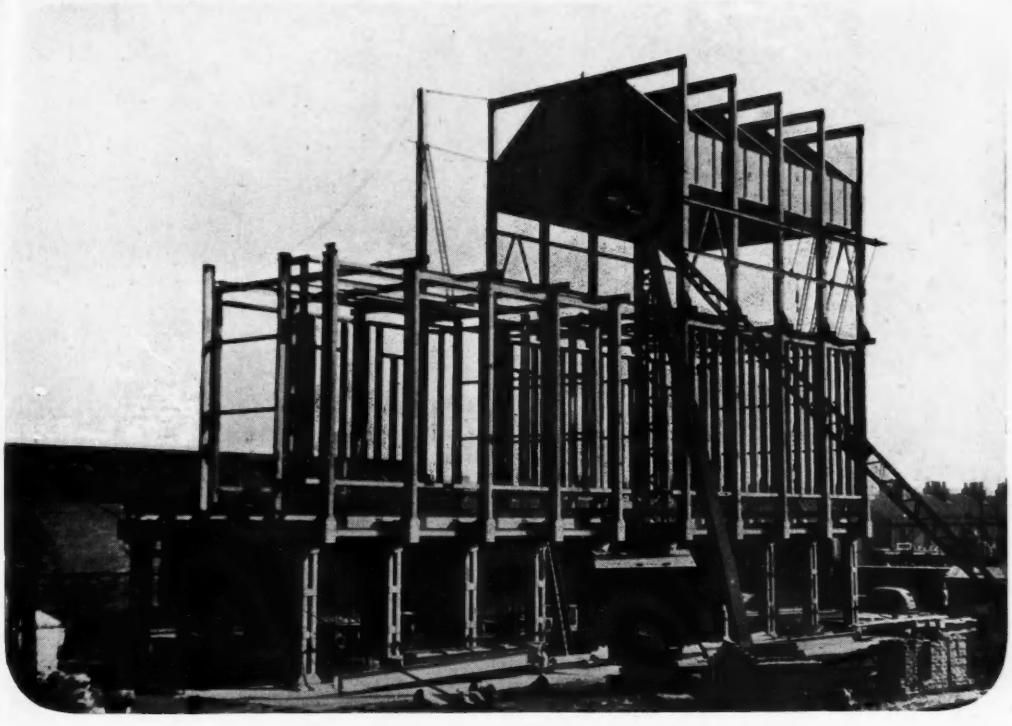
A recent testimonial from Gas Dept.
"We are pleased with results obtained after using ONX Super '83' Brand.
"Our settings were very bad, with large cracks in retorts, and portions of wall actually collapsed.
"Now, six months after repairing 28 retorts they appear as sound as ever; we anticipate the life of the settings will be prolonged."



A. L. CURTIS & CO., *Westmoor Works,* **CHATTERIS,** *Cambs., Eng.*

Printed by STRAKER BROTHERS LTD., E.C.2, for WALTER KING, LIMITED, 11, BOLT COURT, FLEET STREET, LONDON, E.C.4. Wednesday, October 3, 1951.

Work in progress



STOCKTON-on-TEES

Retort Benches under construction for the installation of 64, 50 inch Glover-West Vertical Retorts.

West's Gas IMPROVEMENT CO., LTD.

MILES PLATTING, MANCHESTER, 10

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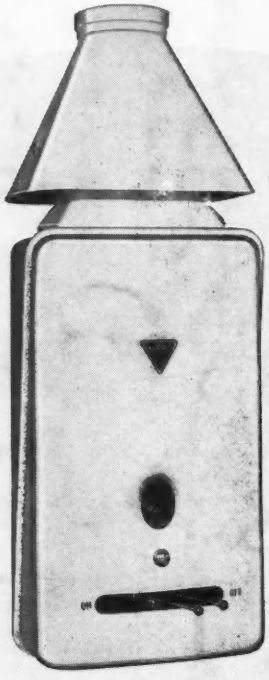
*The new 901 * a larger multipoint*



Finished in white vitreous enamel and heavy chromium plate

The new Ascot 901 multipoint gas water heater has been designed for big installations—club cloakrooms, factory washrooms and large houses.
The 901 will supply up to six distant points, and like all Ascot instantaneous heaters maintains the flow of really hot water for as long as required.

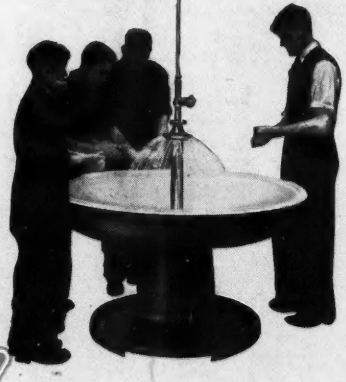
THE 901 WILL SUPPLY

A row of handbasins
Several showers or footbaths
Two or three sinks in a canteen kitchen
A spray wash fountain
Two washing machines of the broken feed type or any similar arrangement of units

ASCOT MAKES THE MOST OF GAS

THE 901 WILL PROVIDE

4⅓ gallons of water per minute raised through 40°F
or
3½ gallons of water per minute raised through 50°F
or
1¾ gallons of water per minute raised through 100°F
Dimensions: 3′ 10″ overall; Width 1′ 4½″; Depth 9¾″
Gas rate: 2250 B. Th. U. per minute, or 4½ cu. ft. per minute of 500 B. Th. U. gas
Full specification on request



The new Ascot 901 gives an ample supply of hot water for wash fountains

ASCOT

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